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Vol. XVI, No. 6

JUNE, 1918

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(SEE PAGE XI)

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VOL. XVI

JUNE, 1918

Number 6

AN IMPERATIVE APPEAL FOR MEDICAL OFFICERS.

An urgent and imperative appeal has just been issued by the Surgeon General of the United States Army, for doctors for the Medical Reserve Corps.

There are to-day 15,174 officers of the Medical Reserve Corps on active duty, and the Medical Department has reached the limit of medical officers at the present time available for assignment. With these facts before the medical profession of this country, we believe that every doctor who is physically qualified for service between the age of 21 and 55 years, will come forward now and apply for a commission in the Medical Reserve Corps.

The Surgeon General says: "So far the United States has been involved only in the preparatory phase of this war. We are now about to enter upon the active or fighting phase, which will make enormous demands upon the resources of the country." The conservation of these resources, especially that of man-power, depends entirely upon an adequate medical service.

Drafts of men will continually follow drafts, each of which will require its proportionate number of medical officers, and there are at this time on the available list of the Medical Reserve Corps an insufficient number to meet the demands of these drafts.

The real necessity for the complete mobilization of the entire profession is imperative. It is not a question of a few hundred men volunteering for service, but of the mobilization of the profession for the conservation of the resources of

this country. Let every doctor who reads this editorial and appeal from the Surgeon General, which appeal is based upon dire necessity, act promptly and present his application for a commission in the Medical Reserve Corps at the nearest Medical Examining Board. If you are not informed of the location of your Board, the editor of this Journal will advise you.

HOW TO OBTAIN COMMISSION.

Such questions as doctors seeking to enlist in the Medical Service of the Army or Navy are likely to ask, are answered in the comprehensive questionnaire which is being sent out by the Medical Section of the Council of National Defense. The questionnaire is subdivided into sections relating to both Army and Navy, to Army only, to Navy only, and to the Regular Army.

In view of the campaign now under way for medical officers, the complete text of the questionnaire is given herewith:

COUNCIL OF NATIONAL DEFENSE, MEDICAL SECTION.

The Surgeon General of the Army and the Surgeon General of the Navy need more medical officers. Our profession has responded nobly to the call of humanity, but more are required. You are needed. The following questions and answers will aid you in your decision:

INFORMATION RELATING TO BOTH ARMY AND NAVY.

(1) Q. How do I apply for a commission in the Medical Reserve Corps?

A. Write to the Surgeon General of the Army or Navy, the Council of National Defense, or for the Army appeal direct to an examiner for the Medical Reserve Corps. Detailed information will then be furnished.

(2) Q. What is the character of examinations?

A. Fill out the application form supplied by the Army, or in the form indicated by the Navy, then submit to a physical and professional examination. All papers, when completed, will be forwarded by the examiner to the Surgeon General's Office with a definite recommendation as the result of the physical and medical findings.

(3) Q. What provisions are made for myself and family in the event of injury or death?

A. Allowances will be made in case of injury or death according to the war-risk insurance act. These are arranged according to a schedule of the number of the officer's dependents.

Cost of Equipment.

(4) Q. What will be the cost of equipment?

A. The average cost of the necessary equipment in the Army is about \$250, although even this amount is not absolutely necessary. The Navy provides an allowance of \$150 to cover this cost. This is paid to the officer upon his first reporting for duty.

(5) Q. What is the time allowed for reporting after notification that I will be assigned to duty?

A. Fifteen days, with few exceptions, and then only when necessity demands.

(6) Q. What will I do when orders are received?

A. Obey explicitly.

(7) Q. What will be the character of orders received?

A. You will probably be sent to a medical military training camp for instruction.

(8) Q. How soon will the call for active duty be received?

A. If a request for immediate service is made, it will probably be granted. If you do not request immediate service, you will be given fifteen days in which to arrange your home affairs from the time you receive the notification that you will be assigned to duty until the day you are to report. However, do not discontinue the practice of medicine until you are notified that your services are needed.

(9) Q. How can I secure immediate service?

A. Write to the Surgeon General of the Army or Navy, Washington, D. C., making such a request, stating at the same time your qualifications for special service.

Present Need for Officers.

(10) Q. Is there an urgent need for medical officers now?

A. The present inactive Reserve Corps of both Army and Navy is practically negligible and consists of officers enrolled but engaged in hospital interne ships and other absolutely necessary present

duties, with which there is no desire to interfere any more than is necessary, and of those retained by different departments for special duties. The Reserve, therefore, has been exhausted and it has been estimated that there is an absolute need now for 1,000 more medical officers in the Navy and 5,000 more medical officers in the Army.

(11) Q. What will be the character of service?

A. Every effort is made so far as possible to place an officer where his special talents will be best utilized, and his wishes with regard to such assignments are accorded every consideration.

(12) Q. When shall I discontinue the practice of medicine?

A. Not until notice is received from the Surgeon General to be prepared for active duty on or about a certain date.

INFORMATION RELATING TO ARMY.

(13) Q. What are the requirements for a commission?

A. An applicant for appointment in the Army must be a citizen of the United States between 22 and 55 years of age, a graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine; he must have qualified to practice medicine and be in the active practice of his profession.

(14) Q. How do I accept a commission?

A. A notice will be received from The Adjutant General of the Army stating that you have been recommended for a commission. Sign the oath of office, take an affidavit before a notary public, and send it with a note of acceptance of commission to The Adjutant General of the Army, Washington, D. C., and at the same time send a note to the Surgeon General of the Army stating that you have accepted your commission as (here note the rank). In the same letter request immediate service, if desired.

(15) Q. When do I become an officer of the Medical Reserve Corps?

A. When the oath of office, together with a note stating that you will accept the commission offered in the Army, is received and is of record in the Office of The Adjutant General of the Army, Washington, D. C.

Pay and Term of Service.

(16) Q. For what length of time do I volunteer?

A. In the Army, five years.

(17) Q. What pay do officers receive?

A. Lieutenant, \$2,000; captain, \$2,400; major, \$3,000; plus 10 per cent. for foreign service. Under the new act just signed by the President, if quarters are not available as a place of abode for wife, child, or dependent parent, each commissioned officer of the Army shall also be paid commutation at the rate authorized by law—first lieutenant, \$432; captain, \$576; major, \$720.

(18) Q. What are the expenses for field service?

A. From \$25 to \$50 per month.

(19) Q. How many medical officers were on active duty April 26, 1918?

A.

Army.

Regular Medical Corps.....	843
Medical Reserve Corps.....	16,359
Medical Corps, National Guard.....	1,204
Medical Corps, National Army.....	111

(20) Q. What is the average number of physicians in each thousand discharged from the Medical Reserve Corps of the Army, and for what reasons?

A. Physical disability, 31; inaptitude, 13; domestic and community needs, 4; deaths, 3; resignations, 10.

INFORMATION RELATING TO NAVY.

(21) Q. What are the requirements for a commission?

A. An applicant for appointment in the Navy must be a citizen of the United States, graduate of a reputable medical school, between the ages of 21 and 44 years; the grade given is assistant surgeon, with rank of lieutenant, junior grade (corresponding to first lieutenant in the Army).

(22) Q. How do I accept a commission?

A. A notice will be received from the Surgeon General of the Navy stating that you have been recommended for a commission. Sign the oath of office, which will be supplied, take an affidavit before a notary public and forward it with a note of acceptance of commission to the Surgeon General of the Navy, Washington, D. C. In the same letter request immediate service, if desired.

(23) Q. When do I become an officer of the Medical Reserve Corps?

A. When the oath of office together with a note stating that you will accept the commission offered in the Navy is received and is of record in the Bureau of Navigation, Navy Department, Washington, D. C.

(24) Q. For what length of time do I volunteer?

A. In the Navy four years, or for the duration of war.

(25) Q. How many medical officers are on active duty?

A.

Navy.

Regular Medical Corps.....	844
Medical Reserve Corps.....	1,150
Medical Reserve Force.....	
Medical Corps, Naval Militia.....	
Retired Medical Officers.....	

INFORMATION RELATING TO REGULAR ARMY.

(1) Q. How do I apply for a commission in the Regular Medical Corps of the Army?

A. Write to the Surgeon General, United States Army, Washington, D. C., and detailed information will be furnished.

(2) Q. Are there any vacancies in the Regular Medical Corps of the Army?

A. 1,100.

(3) Q. What is the character of questions?

A. Full information concerning the examination may be procured upon application to the "Surgeon General, United States Army, Washington, D. C." The essential requirements to securing an invitation to report for examination are that the applicant shall be a citizen of the United States, between 22 and 32 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, of good moral character and habits, and shall have had at least one year's post-graduate hospital internship.

(4) Q. What commission will I receive?

A. Those applicants who successfully pass the examination are commissioned first lieutenants in the Medical Reserve Corps, and sent to either the Army Medical School in Washington or to a training camp for a course of instruction, covering a period of approximately three months, during which time they draw the pay and allowances of their grade. If, at the close of their instruction, they pass the final examination, and are favorably recommended, they are commissioned first lieutenants in the Medical Corps of the Regular Army.

Pay in Regular Army.

(5) Q. What is the pay?

A. To each rank is attached a fixed annual salary, which is received in monthly payments, and this is increased by 10 per cent. for each period of 5 years' service until a maximum of 40 per cent. is reached. A first lieutenant receives \$2,000 per annum, or \$166.66 monthly. At the end of 5 years (during the period of the war, at the end of one year) he is promoted to captain, subject to examination, and receives \$2,400 a year, with an increase of 10 per cent. after 5 years' service, making \$2,640, or \$220 per month. After 10 years' service the pay would be \$2,880 annually, or \$240 per month. The pay attached to the rank of major is \$3,000 a year, which, with 10 per cent. added for each 5 years' service, becomes \$3,600 after 10 years' service, \$3,900 after 15 years' service, and \$4,000 after 20 years.

(6) Q. What are my prospects for advancement?

A. During the existing emergency a first lieutenant of the Medical Corps, United States Army, is required to complete only one year's service, instead of the 5 years provided for by the act of June 3, 1916, to become eligible for promotion to the grade of captain, subject to examination.

(7) Q. What are the arrangements for retirement?

A. Officers of the Medical Corps are entitled to the privilege of retirements after 40 years' service, or at any time for disability incurred in the line of duty. On attaining the age of 64, they are placed on the retired list by operation of law. Retired officers receive three-fourths of the pay of their grade (salary and increase) at the time of retirement.

STAND BEHIND THE BOYS.

How many doctors have applied this now very expressive phrase to themselves? There is nothing that puts more heart and gives so much confidence to a soldier in the thick of a fight, than the thought that if he does suffer a casualty he will receive proper medical care and attention. What are you doing in this respect?

There are many boys, sons of your patients or friends who have been or will be called into the service, and what a source of consolation it would be to the parents to know that possibly their own doctor might be the one to look after their boy, and they will welcome your acceptance of a commission in the Medical Reserve Corps and compliment you for so doing.

The opportunity for you to do the most good in a professional way to the greatest number of people, is to offer your service to your country through the Medical Reserve Corps. Do not think longer about it, but apply at once to your nearest Medical Examining Board, and if you are not informed of its locality, the editor of the Journal will supply the necessary information.

STAND BY OUR BOYS, YOUR BOYS, THEIR BOYS. Remember the gallant French in '76. *The British who stood by Dewey in 1898. The Garibaldis who were always for LIBERTY.*

The rapid expansion of the Army calls for a largely expanded Medical Reserve Corps. The Surgeon General has issued a most earnest appeal for doctors. The Department has reached the limit of medical officers available for assignment.

MEDICAL EDUCATION IN TIME OF WAR.

It is an axiom of intelligent social order that there should be certain safeguards for the public in the matter of incompetent ministrants to public and individual health. The sole standard which is practicable, fair and efficient in its results from the standpoint of the public, is a standard of preliminary and professional education. Provided the aspirant has thorough preparation for and training in his department of therapy, he has the right to prepare for any system he may prefer just as the individual sick has the right to select what therapeutic agency or person he will patronize. Under these conditions the efficient method will show itself certainly and will eventually be chosen by the thinking portion of the population. The essential point is that preliminary and professional education shall be thorough and comprehensive. The regulation of the practice of medicine thus becomes solely a matter of educational standards and thorough training.

Every physician should read attentively the paper

by Dr. H. E. Alderson of the State Board of Medical Examiners, on the Regulation of the Practice of Medicine in California, which was published last month. In connection with the argument of that paper, it is interesting to note the following quotation from a letter from the Surgeon-General of the Army to the deans of medical schools of acceptable grades: "It is the wish of the Surgeon-General that the same exacting standards be placed upon Medical Enlisted Reserve Corps men (i. e., medical students) that are placed on other men in time of peace, and that the professional training of Medical Enlisted Reserve Corps men should be decreased in no respect either in quality or quantity. The requirements for the satisfactory care of our soldiers are fully as high as for civil practice."

Dr. N. P. Caldwell, secretary of the Council on Education of the American Medical Association, said recently¹: "Even for Army purposes, the great demand is not so much for ordinary physicians as for those of highly technical and special training. Emphatically, therefore, the present demand does not call for a lowering of educational standards but for a continuation of the present entrance requirements of two years of college work, and for further improvements in laboratory and clinical equipment, and more particularly in the methods of teaching in all medical schools. That by such improvements the demand will soon be supplied is evidenced by the fact that, in the better medical schools, the number of graduates has steadily increased each year for the past five years, while the number graduating each year from the lower grade colleges has steadily decreased." Dr. Horace D. Arnold¹ says: "I wish to emphasize again one point briefly mentioned in my opening remarks, namely, the importance of not lowering the standards of medical education during this period of war. It means that the modern thorough training, with its broad scientific basis, must be fully maintained, if we are to make of our medical students officers who are competent to give proper care to our soldiers. We must not relax the thoroughness or the essential content of that training. The fact that the number of teachers is reduced is merely a reason for those who are left to work longer and harder. It is not a justification for weakening the instruction given."

These quotations from such authority speak in no uncertain tones and come with the force of war orders. As has been urged before in the JOURNAL, the standard of civil practice must be maintained and advanced, simply because we are at war. So, too, must public health programs of every sort be pushed as they were never pushed in time of peace. And again here, at the root of the whole matter, we must see to it that the supply of highly trained and properly trained doctors is not reduced at its source. In the face of these facts, any effort to lower the standards or status of medical education because of war times, savors unduly of that Prussian propaganda we abhor. All along the line, keep our work at highest pressure and efficiency, and so will we quickest defeat the Hun.

¹ A. M. A. Bulletin, 1917, xiii, 2.

THE SUPPRESSION OF QUACKS.

No feature of its many valuable activities has been more effective and directly beneficial to the public, than the steadfast policy of the State Board of Medical Examiners to suppress advertising quacks so far as money and legal machinery were available. As was pointed out in the case of Quack Chamlee of unholy fame, it is a matter of extreme difficulty to secure conviction of quacks even when caught red-handed in their quackery. This is illustrated by the notorious difficulty in securing conviction of abortionists. Cases are known where all circumstantial evidence was complete, including the corpus delicti fresh delivered, and the operator and nurse red-handed literally, and yet in the face of sworn testimony of competent witnesses, the lay jury acquits.

One has but to recall the wax works and Men's Museums of a few years ago, with their glaring electric displays, the blatant advertising of the men's specialists and similar quacks, charlatans and fakers, to realize the effective work of the Board of Medical Examiners, which has to a remarkable degree scoured such riff-raff and medical scum from the larger cities of the state. Even the daily papers show improvement in the number and boldness of the advertisements of this genus of medical parasite.

The legal work of the Board is voluminous. It includes the prosecutions of violators of the Medical Practice Act, and the closing of a large number of questionable medical offices and institutions, designing to separate the sick from their money. It has also been active in the matter of citations against violators of the Medical Practice Act. Numerous important court procedures arising from the operation of the Medical Practice Act, wherein the citation of specific provisions of the Act was to be determined, have been brought to a successful issue. The record of such work is almost endless and should receive the intelligent appreciation of every doctor.

Much remains to be done. There are always new crops of quacks growing up and new situations of quackery arising demanding new methods and new attacks. In all the Board is active and efficient. It has immensely raised the character of average medical service in the state. It has accomplished definite and important things in its program. In all of these it needs and should have co-operation and support from all doctors.

The suppression of quackery has always been handicapped by an unenlightened press. When we have a clean press, when medical advertisers and quack testimonials are eliminated from the newspapers, then the quacks will have lost their chief asset and purveyor of dupes. And also when the newspapers no longer carry such advertising, they will be more sincere in attracting strangers and tourists to this state. It is a hard thing to expect tourists to select the Golden State for their homes when its manifold excellencies are served up with a sauce of quacks, and charlatans and medical testimonials. May the State Board increase its good work of elimination until the state is thoroughly

cleaned of this scum which hangs tenaciously to its skirts.

REBATES FROM DRUGGISTS.

Not nearly all of the druggists addressed by the Journal for a statement regarding their practice in the matter of rebates to doctors have yet replied. Several, however, have replied to the effect that they do not give rebates on prescriptions and do not give stock in the drug firm as an inducement to secure prescription work from doctors. In some cases the rebate consists of a free personal account to the doctor for his own and his family's drug and toilet sundries. Sometimes the druggist renders a bill in due form, but the bill is ignored by the doctor and the druggist cannot be blamed if he does not sue for collection, when forced collection would almost certainly mean loss of all prescriptions from that doctor. Cases rarely occur where the druggist makes a handsome present to the doctor rather than give him a direct rebate on prescription fees.

In all these cases the doctor is first to blame but not solely to blame. Without question the entire matter is on a much better plane than it was even a few years ago. Improvement has been fairly rapid, and while the general practice and custom are beyond reproach, there are still a few doctors and druggists, too, who bring contumely on their profession and lay the entire profession open to reproach quite without reason. Such are they who accept or offer rebates in some such form as enumerated above. For their sins the profession suffers. It behooves the profession, therefore, to purge itself fully of this evil and ancient scourge. The few among the doctors who persist in accepting, or perchance even demanding, rebates in some form should be shamed out of their anachronistic position. And if they yield not to shame, then their official societies should take pains to show them that they and their rebating are not wanted nor tolerated in good medical and pharmaceutical society.

If all druggists agreed to give no rebates there would be no individual loss from trade turned away for lack of rebates. But vastly better yet, if no doctors would accept rebates, and if all doctors would insist on paying their just debts, there would also be a remedy for the evil, and a remedy which would be final. We are rapidly approaching socialized medicine and fuller state control of medical practice and organization. Rebating will not stand the light of public control. Let it be abolished completely and at once. Let each doctor be ashamed to accept an unpaid account, or rebate checks, or stock in the firm. Let publicity and shame do their good work. Because, while the practice is small, its odor is great and a little of it makes a great stench.

"Have you had a thought that's happy,
Boil it down.
Make it short and crisp and snappy,—
Boil it down.
When your mind its gold has minted,
Down the page your pen has sprinted,
If you want your effort printed,—
Boil it down."—Survey.

SOCIAL INSURANCE.

At this date nobody can tell what will happen to Senate Constitutional Amendment No. 26, when it is voted on by citizens of this state next November. Most people vote against amendments they do not quite understand, and unless a vigorous propaganda is made for this amendment between now and November, the medical profession may rest assured that the Christian Science and insurance interests will attend to its defeat.

Insurance people oppose health insurance, they claim, not because they think it is necessarily bad, but because they fear the invasion of the state into all branches of the insurance field. Many large commercial organizations take the same view.

Furthermore, many of us are individualists and can see no reason why the state should invade so many fields of private endeavor. We are willing to recognize the need of government control and management of many industries during war-times, but are not yet convinced that all this will be best in days of peace.

But should the amendment carry, the legislature will have a busy time framing a health insurance bill, or disfiguring beyond recognition any proposed bill. Prohibition will probably be the big absorbing question, the one big legislative scrap. And even if a health insurance bill be proposed, the legislature may vote it down. If a bill passes and ignores Christian Science, this cult is apt to ask for a referendum. If a bill recognizing Christian Science should pass, there surely will be a request for a referendum. So that, all in all, health insurance is not yet upon us!

But in the meantime read the report of your Committee on Health Insurance. Read the transactions of your House of Delegates. Study them. Make up your minds as to what you are going to do in this matter. Then write and tell us. We are all interested.

EDITORIAL COMMENT.

You are reminded that the JOURNAL is right up to date now on manuscripts and the editor wishes to receive papers from all parts of the state, prepared for publication. To insure publication, it is only necessary to have something to say, to say it concisely and then stop, and to type it with attention to the rules of all manuscripts for publication.

Even yet there are vacancies in the list of county editors. Turn to the first page and see if your county is represented. Then turn to the County Society columns and see if your editor has done his duty.

The burden of proof on every doctor not in uniform these days is to show cause why he is

not. Every doctor in civilian attire should consider himself under suspicion unless he has definite and really valid reasons.

In *The Indian Journal of Medical Research* for July, 1917, Lane records the curious fact that an autopsy on a tiger which had never eaten human flesh, showed the presence of the human type of hookworm. He states, however, that this will have no bearing on the methods now used in the eradication of human hookworm!

When other considerations are equal, members of the California State Society of Medicine should make a special point to patronize firms which advertise in the Journal and, moreover, should tell the firm where the advertisement was seen. It is a small matter for the individual doctor, it is a large matter in making the Journal more efficient.

The societies of Imperial, Lassen-Plumas, Merced, Placer, San Benito, Tehama, Tuolumne and Yuba-Sutter counties have not yet elected county editors for the Journal staff. This should be done at once. Much devolves on the county editors in developing the Journal. Do not delay longer. Elect your editor. If you already have one, notice how he is representing your society in the Journal.

Your particular attention is called to the annual meeting of the American Medical Association which convenes in Chicago, June 10-14. Those who are going should have made reservations before this date, but will find hotel lists and other information in the Journal A. M. A., March 30, 1918, et seq. The location, the critical time in medical, military affairs, and the character of the program prepared, indicate the most successful and worthwhile meeting ever held.

The Food Administration advises garbage disposal by way of hog feeding. The pork from garbage-fed hogs is said to be equal to the best corn-fed pork. The outlay for plant and equipment is small as compared with the necessities for incineration of garbage. Here indeed is a chance for effective food salvage. The loss of food in garbage is still considerable, certainly much more than it should be. In any case, the garbage can well be turned into pork.

In one respect, Lloyd George and the Kaiser seem in agreement. Says the former: "We are fighting Germany, Austria and drink and, as far as I can see, the greatest of these deadly foes is drink." Says the latter: "The nation that will win in this war will be the one which is the most sober." It is time we seriously consider prohibition as a war measure of first importance, from the food, the economic and the public health points of view. There seems no doubt that the major question at the state election this fall will be that of prohibition, and here as in all public-spirited measures, the medical profession should lead.

Be sure to read under Correspondence, the letter from Dr. Harry M. Sherman, of the State Council of Defense. Then read over again the editorials in this issue on the military situation. Then decide, if you are not in uniform, what hinders your going in. If there is doubt in your mind as to whether you should go, or if you feel that you should not, do not run the risk of a wrong decision. Lay the facts before a competent tribunal. Write them to the State Council of Defense or to the officers of your State Society. In either case you will receive an impartial verdict based on the facts of your personal situation, and you will be fortified in your resolution and strengthened in your conviction that you are doing the right and patriotic thing, whether you go or whether you stay. But in any case, *decide now.*

The Smoke and Dust Abatement League of Pittsburg states that during 1917 about 500,000,000 tons of soft coal were burned in the United States, of which about 20 per cent., or 100,000,000 tons, were lost through incomplete combustion. This incomplete combustion is indicated by black smoke and soot. To allow black smoke and soot to appear is a direct evidence of coal waste and should be stopped. It is wasting a chief sinew of war and is unpatriotic. It is a nuisance unmitigated, it increases fogs, cuts off the sunshine, pollutes the atmosphere, hinders vegetation, destroys building materials, and is too costly and wasteful to be tolerated. If the black smokers will not of themselves stop this wasteful nuisance, they must be compelled to do so.

Many papers read at the annual meeting of the California State Medical Society at Del Monte have not yet been sent to the Journal. These papers become the property of the Journal and publication elsewhere without permission from the Journal is not permissible. Authors are requested to see that their papers are sent in at once. It is hoped that no undue delay will appear in their publication. Those papers already received again illustrate the difficulties which attend the medical writer who forgets the requirements of the editorial office. Seldom is a paper received without misspelled words, incorrect grammar, or poor typing. Wide margins and double spacing are too often forgotten. Carbon copies are returned, as only originals are wanted for the compositors. The simpler rules of punctuation are often abused. Words are capitalized without reference to their grammatical use. "E. g." is used when "i. e." is intended. And above all, the cardinal sin of too many writers is verbosity. Most papers could be condensed to their advantage.

31. Try to ease the mind of the patient, encourage him to look forward to being cured, even if thou art not thyself convinced of it, for this will greatly strengthen his nature.

38. When the patient does not follow thine injunctions or his servants and people do not promptly obey thine instructions or show thee the proper respect, it were better to give up the treatment.—Isaac Judaeus.

Special Article

TRAINING OF NURSES AND SOCIAL WORKERS IN THE PRESENT EMERGENCY.*

By PHILIP KING BROWN, M. D., San Francisco.

Attention was called in the March 18th number of the Red Cross Bulletin to the fact that the United States has only 7000 enrolled nurses and needs at once 35,000 more. There are said to be over 80,000 nurses in the United States who have the title R. N. which is essential to Red Cross service. This number includes thousands eligible to the title who were married and out of the profession when this standardization was put into effect several years ago and who applied for registration and the R. N. title on the ground of sentiment. Many more of the 80,000 have married since or have gone into the rapidly enlarging field for trained nurses in public health, social service, permanent hospital positions, laboratory work and in doctors' office work, so that it is probable that there are not available for Red Cross service as nurses more than 40,000 or 50,000 today. The situation is as serious as was our entering the war with an army of scarce a handful, and some plan for increasing the supply of nurses should be instituted at once if our soldiers are not to suffer as have the soldiers of France and England because of the scarcity of trained nurses.

The Government has set the example of intensive training to increase its organized man power particularly in the training of officers, and the same method must be instituted at once if we would meet adequately the need of a larger trained woman power. Tradition and needs, long outgrown, have fixed the methods of training nurses in hospitals, largely to meet the needs of hospitals and to provide private nurses for the sick, and not to meet the broadened fields of the nursing profession, so that today most of the best nurses are obliged to supplement their training outside of hospitals before they settle down to the particular branch of the nursing work that they choose to follow. If hospitals do not teach the endless ramifications of public health and social service work, specialties that have been developed through the medical profession and with which nurses should naturally be associated, is it quite fair to make a young woman go through the long three years of a nurse's training only to have need of an additional year or more of training before she attains the goal of her desire? A nurse's training in point of fact is not essential to many of these specialties although a valuable foundation upon which to build. Three years of hospital training, however, has a tendency to destroy initiative which is peculiarly necessary in public health or social service work. Practically no social workers are recruited from the ranks of nurses and many of the best public health workers are not nurses. The training of nurses today contains too much that ought to be required of young women before they enter training schools, since the physiology, anatomy, bacteriology, and chemistry taught in

* An address delivered May 15, 1918, at the Graduation Exercises of the Lane Hospital Training School.

most hospital training schools is exceedingly poorly done. It is text-book work, where laboratory work and practical demonstration are absolutely necessary to proper understanding. Then, too, the pupil nurses are not always adequately supervised, and the passing-on-of-information method is too much in vogue. Too much menial labor is required of nurses, work better done by orderlies or maids. No established system exists by which a nurse may take her three years' training in several schools where she could get to advantage the particular kind of work she might wish to follow. In no other educational system in the country is this true. In preparatory schools, colleges, technical and professional schools of high standing students may be accredited with work done elsewhere often without need of examination. Men in the army have been promoted from the ranks to positions as officers, and definite provision is made for the taking of examinations which qualify them for officers' rank. This lack of reciprocity among hospital training schools is one of the most unfair conditions in the present system of training nurses. It is due to the too frequent lack of a definite standardization of the teaching, and the fact that teaching is a profession and most hospitals have failed to look upon it as anything but an experience. Undoubtedly the hospitals have been seriously handicapped by having to make inducements to women to enter the schools and by too wide a swing of the pendulum in the eight-hour law, which interferes with intensive consecutive work and in consequence the personal interest of the nurses in individual cases. The conflict of interests which has arisen is one which must be straightened out, both in the interests of the hospitals and of the nurses, to say nothing of the interests of the sick and wounded in the present emergency. Why should pupil nurses be boarded, uniformed, and even paid small salaries by hospitals when they are being helped to enter one of the most popular and remunerative fields open to women—far more free and better paid than public school teaching. There is no more reason for it than that the public should pay the board of the normal school pupils. The cost of nurses' homes and their training should be borne by the pupil nurses and not by the sick.

If the point is made clear that hospitals under the present regime do not as a rule do the work of training the modern nurse satisfactorily, both because of poor teaching of the sciences for which they are not organized, and the omission of opportunity for special training, and that all hospitals require too long a training period, it follows that now is the time to recognize the situation. If there is no real need of the three-year training why not make the present emergency the basis for reorganization.

For some years past various efforts have been made by the leading hospitals in the country to improve all the conditions, educational and otherwise, attending the training of nurses and to draw into the profession more college women. The latest of these movements is the three months' intensive training course preliminary to two years'

hospital work offered to college graduates of not over ten years' standing, by Vassar College this summer and subsidized by the American Red Cross. Herbert Mills, Dean of the Training Camp for Nurses, in an article on College Women and Nursing, in the Survey of April 27th says, "The work of the nurse has been largely private family nursing which has not seemed to the college woman to offer full opportunity for her liberal training, her developed personality, her social vision and obligation. The three years' training course of the better hospitals with much repetition of college courses has been a hindrance to the entrance of college women into nursing." It would be safe to add three other factors which have operated to keep college women out of nursing—the constant and unnecessary repetition of menial work, especially in the poorer schools, the entirely unnecessary length of service, and finally the dormitory and boarding school system of living and its limitation of independence, which is bad psychology, for nurses are a class of young women needing outside contacts, as people whose labor confines them closely always do, and the boarding school regime is intolerable to young women who have enjoyed academic freedom for four years. The Vassar experiment is known as the Plattsburg for Nurses and in three months the sciences and some administrative work will be taught. The graduates of the camp will save nine months of the present three-year requirement for nurses' training. This is certainly a big step in the right direction because it puts the teaching of sciences in the place where it belongs, in the hands of trained teachers with proper laboratories and makes it a requirement for admission to hospital training. However it is no solution to the immediate problem of shortage of nurses for community and war work, nor is it commensurate as a solution to the broad problem with the Stanford plan which has now been in operation a year, and has already been adopted by the University of California. The Stanford plan permits a college student at any time in her first three years or directly after it to take a probationary period of three months and follow it up at a suitable time if she desires by the balance of two years of hospital training. She is given her A. B. degree on completion of her nurse's course and under our state law is a candidate for examination for her R. N. This accomplishes in five years what the Vassar plan does in six and a quarter years and it does it equally well and far more conveniently for the student. She gets her mental food in a better balanced ration. This plan represents the highest practical advance in this country in the training of nurses and it is with no small amount of pride that you may recognize your connection with the institution which has taken this leading place in putting your profession on a constantly higher educational basis.

It remains to consider a plan of reorganization of nurses' training that will both help the present emergency, remove the objections economic, social and educational to the present system of training and so broaden the nursing field that it may co-

ordinate better with the needs of the community.

A three months' course in anatomy, physiology, bacteriology, and chemistry in a Class A medical school or teaching institution properly equipped with laboratories and trained teachers and acceptable to an association of hospital training schools, should be a requisite for admission to all first-class training schools. This should be followed by six months of *well supervised* ward work in medical and surgical wards of a good hospital, and a three months' period of operating-room discipline. During all this time pupil nurses should board themselves and pay fees for their instruction as in any normal, vocational or technical school or in college. Pupil nurses should be ready then for a three months' final training in army or cantonment hospitals before going to the front. Army hospital work is a specialty by itself and to make good army nurses a supplementary course of training in a base or cantonment hospital is really necessary even for experienced graduate nurses. To meet the present emergency before any reorganization of nursing courses could be effective all pupil nurses in the United States of two years' standing should be available immediately for the final army hospital training and indeed the preliminary period under the present training scheme might be cut to eighteen months if necessary. Under the intensive training plan, should nurses not choose to elect army service as their specialty after the nine months' hospital work, further three months' courses in other special lines ought to be open to them. While only one such course might be required, it should be possible for a nurse to continue on and take any number of elective periods, paying a suitable fee for the training and she should be able to re-enter any school at any time for supplementary courses so that she might broaden her field of work. Among such special courses which might be given to advantage by hospitals are children's diseases, obstetrics, nursing of tuberculous, nervous, or mental diseases, laboratory and X-ray technique, and finally social service and public health as far as hospitals can teach them satisfactorily.

One cannot read a single number of the *Quarterly Journal of Public Health Nursing* without realizing that not even our public school system is of any more importance to the future welfare of the country than is the organized work of Public Health Nurses. From the cradle to the grave our people take no important step in which they do not feel the influence at once of this group. The infinite angles of infancy and child welfare—yes, even the prenatal care and direction afforded the mother are made possible by this body of women. The food given the child, the way it is handled, the housing conditions, exposures to epidemic diseases are all so followed up in these days that children are safeguarded from hundreds of dangers they or even their parents little dream of. From the moment the immigrant and his family land on our shores, they, too, come under the watchful eye of these guardians of health and through the factories and homes where they work and live is an ever-present influence for better social conditions. The nurse in

our large public hospitals sees the end results of what is too often carelessness, exposure, mental and moral decay, and yet she is so situated that she is out of touch with the social problem involved in the case she cares for. If she has the social sense she must stifle it, for it has no place in her work in the hospital. If a man is brought in with typhoid there is no one to explain to his wife the probable length of his illness or to help her conserve her resources until the man can go to work again. Given this lack of social guidance and she and her family can easily become dependents. In one of our hospitals I saw an acutely insane woman with a depression in which she refused to eat and by her side sat her husband with the two little children of the family. He was the real sufferer—unable to go to his work because he could not leave the little ones, and utterly at sea about what to do. The hospital fed the woman scientifically and skillfully through a stomach tube and tended to her bodily wants, but it had no solution for the tragedy of the family. Any social worker or public health nurse could have told the man that the woman must go to a state hospital for the insane and that there were many institutions where his children could be cared for better than he could care for them, leaving him free to earn the living for the family. I think it is safe to say there is no public hospital today that has any claim to first standing that does not provide some social service guidance for its patients and opportunity for study along these lines for its nurses. In the *Survey* of May 4 Miss Edith King, manager of the National Social Workers' Exchange, says, "There is a marked labor shortage in social work. There are not enough people planning for the training. On the basis of last year's enrollment in the five or six leading training schools for social works 500 is a generous estimate of the students in training. The fact that available positions will probably be double and perhaps treble that number indicates the problem set by the shortage." She goes on to speak of the short training courses and to make a strong and well-founded plea for the importance of definite training, referring specially to the two-years' course and adds, "There is little use in believing that older women who have never held a paid position in their lives can suddenly blossom out in a profession for which they feel that 'experience in life' has fitted them." It seems to me important to emphasize what Miss King has already laid great stress upon—the need for thorough training in this field of social service work as well as in that of public health nursing. So many nurses wonder that public health positions go very frequently to lay people. The reason is not far to see when one follows the work of a trained public health worker and sees how little of it duplicates anything a nurse ever learns in the average hospital. Prof. Mills, in the article already referred to, in speaking of the less full opportunity for the nurse for liberal training than the college woman has, and the consequent limited social vision, says, "The great health movement of the last decade or two has rapidly changed this situation. In every direction have opened up lines of executive and social work which only the trained nurse

can do." This is just the point of the whole problem about which I differ emphatically with Prof. Mills, for with her present limited training and destroyed initiative the nurse has not the training she should have in executive work and in the vast majority of hospitals no social work whatever.

We cannot soberly contemplate the huge health problems of the war and of the later readjustment in the light of what we can see now, and not tremble at the risk we run in not preparing more than we are doing to meet them.

Original Articles

THE INTERRELATIONSHIP OF ASTHMA AND TUBERCULOSIS.*

By PHILIP H. PIERSON, M. D., San Francisco.

Asthma as a disease entity does not exist. Among other things it may be an anaphylactic manifestation. This aspect of the subject has been very fully and ably investigated by Talbot and Goodale of Boston and Selfridge, the latter having made a particular study of the polius and flora of California and the Pacific States. It may be due to chronic infection in some other portion of the body; it may be the result of a chronic congestion and inflammation as exists in cases of prolonged cardiac insufficiency. The particular type of asthma that is associated with pulmonary tuberculosis also bears out the idea that asthma, asthmatic breathing, is a symptom and not a disease in itself. Consequently, let me here explain what I mean by asthma.

To me it means a condition symptomatically consisting in more or less prolonged expiration and sometimes inspiration, rather constant for days, weeks or months, associated with exacerbations of more intense discomfort and often increased by exertion. To the patient himself, it may be represented only by a rattling in his "upper air passages" and a slight dyspnea, especially with expirations. The physical signs consist in prolonged expiration, general or localized, accompanied by musical or sonorous rales. With cough or increased depth of respiration, these signs are often increased.

Many older writers on the subject were quite unanimous that these two diseases were antagonistic and seldom existed together. Brügelmann,¹ Sarda and Vires,² Grasset,³ Rancoule⁴ and Baur⁵ held that asthma was antagonistic to tuberculosis and never secondary to it, but always primary. Landouzy⁶ suggested that asthma might be an anaphylactic reaction to the tubercle bacillus. Roboule⁷ referred to a pretubercular asthma, mean-

ing that there are individuals with a nearly inactive tuberculosis manifesting itself by producing asthma. Osler⁸ observed that one of the early signs of tuberculosis might be asthma with its wheezing and sibilant rales. Socca,⁹ from the study of 840 cases of asthma, concluded that nearly all were due to tuberculosis. Reynier,¹⁰ on the contrary, in an article of considerable length, concludes that asthma is in no manner dependent on tuberculosis. Hoffman¹¹ believes that if they do exist in the same individual each gives up its more pronounced symptoms and the asthmatic attacks become less marked than in other individuals and the tuberculosis becomes a fibroid phthisis. Giffin¹² in reviewing 83 cases of asthma in the St. Mary's Hospital records found only three cases of definite tuberculosis but expressed a suspicion of there being a possible latent tuberculosis as a basis in others.

That enlarged bronchial lymph glands, which may be accepted as an evidence of tuberculosis, were found in asthmatics was first reported in a series of eighteen cases by Chelmonski¹³ in 1912. Lawrason Brown¹⁴ is of the opinion that cases of chronic tuberculosis not infrequently developed asthma. Last year Orville Brown¹⁵ published a book on asthma and in it he puts forth a theory—"The non-passive expiratory theory"—to explain the morbid condition which exists at the time of asthmatic attacks, whether mild or severe. His theory is that with ordinary respiration there is an influx of blood and lymph toward the periphery of the lung during inspiration and a retardation of the flow during expiration due to the increased intra alveolar pressure; also that by the act of frequent coughing, sneezing, etc., a still greater increase of intra alveolar tension is created as compared with the pressure in the bronchi and there is a greater impediment placed in the way of blood in the bronchial veins and of the lymph. This causes an obstruction of varying degree in the larger bronchioles with expiration and it gives the sibilant and musical nature to the breathing and rales. There is much more to the theory but this is all that need be considered here.

This requires at least two predisposing factors—paroxysms of coughing and congestion or inflammation in the moderate sized bronchioles. Let me emphasize the fact that asthma is not always a diffuse process but often limited to a small area in one lung. Although the signs may be localized the symptoms may be localized or general. In tuberculosis, we have both of these factors. In order that we may understand why asthma occurs in one or another part of the lungs, may I briefly

* Read before the Forty-seventh Annual Meeting of the Medical Society of the State of California, Del Monte, April, 1918.

1. Brügelmann, W.—Therap. Monatsh., 1898, xii, p. 320; Das Asthma, Wiestaden, 1901, p. 39.
2. Sarda, G. and Vires, J.—Revue de la Tuberculose, 1894, ii, p. 121.
3. Grasset—Leçons Cliniques, 1896, from Reynier (No. 21).
4. Rancoule—Thèse de Montpellier, 1899, from Reynier (No. 21).
5. Baur—Forme Clinique de la Tuberculose pulmonaire, from Reynier (No. 21).
6. Landouzy, M.—Presse méd., 1912, p. 892.
7. Roboule—Thèse de Montpellier, 1904, from Reynier (No. 21).

8. Osler, Wm.—Principles and Practice of Medicine, 1905, Ed. 6, p. 322.

9. Socca, F.—Arch. gén. de méd., 1906, cxviii, p. 1601.

10. Reynier, Leopold de—Proc. Sixth Internat. Cong. on Tuberc., 1908, i, p. 1133.

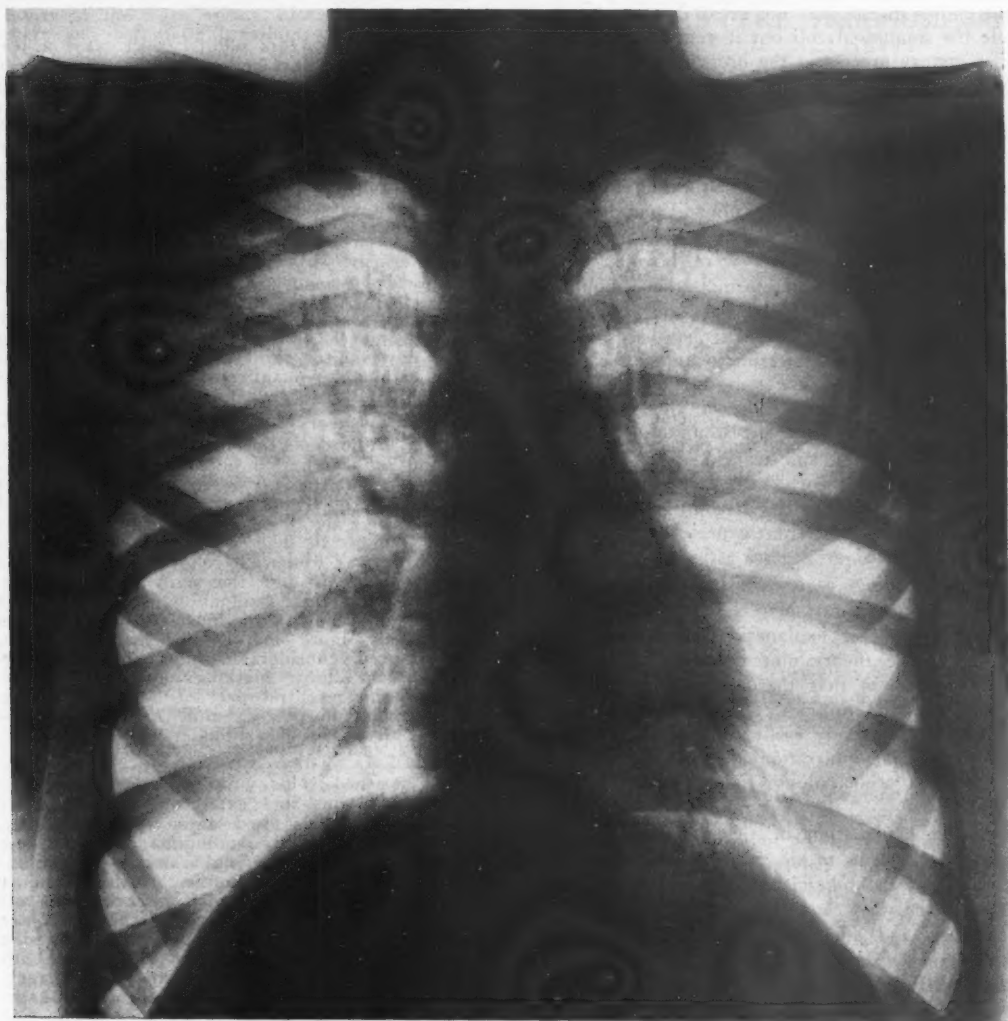
11. Hoffmann, Frederick A.—Nothnagel's Encyclopedia of Practical Medicine, 1902; Bronchi, Lungs and Pleura, p. 219.

12. Giffin, H. Z.—Am. Jour. Med. Sc., 1911, cxlii, p. 869.

13. Chelmonski, Adam—Deutsch. Arch. f. Clin. Med., 1912, cv, p. 522.

14. Brown, Lawrason—Osler and McCrae, Modern Medicine, Lea & Febiger, 1913, Ed. 2, i, chap. vi, p. 376.

15. Brown, Orville—Asthma, C. V. Mosby Co., 1917, p. 179.



Case No. 3. Example asthma more marked on right side.

review the main points in the development of tuberculosis.

Whether primarily or secondarily infected the first evidence of pulmonary tuberculosis is an enlargement of the bronchial glands. Their enlargement is a part of the normal mechanism for the battle against the disease. It is through their functioning that antibodies are manufactured. When the individual is enjoying good health we do not interpret the glands as a tubercular focus; it is only when the person is below normal that we point to these as of potential or possibly actual danger. In this latter type of individual the glands are swollen and more actively diseased. Their presence irritates the adjoining bronchi, setting up a low grade inflammation which may become the seat of secondary infection. So here we have the factors above stated which may start the vicious circle for an asthmatic condition. This

condition may occur during childhood or later life and may irritate one bronchus and hence one lobe, or one lung or both lungs. This is a very important factor in properly interpreting *localized* asthmatic breathing. From the glandular condition slowly or rapidly develops a peribronchial fibrous thickening extending outward toward the periphery. This may involve one lobe much more than another. All this time the individual is manufacturing antibodies, and if these are sufficient the disease remains confined and not actually dangerous. If the scale turns against the individual in this struggle, we find a breaking down of the glandular or lymphatic elements at the hilus or nearer the periphery and a focus started in the lung tissue. Again depending upon the location and also upon the extent of the process, we may have one or more lobes involved by an irritating process in a bronchiole and a factor

established for a possible localized asthma. The tuberculous disease may not break down so as to invade the smaller alveoli but it may cause a chronic inflammatory process in the bronchioles on which is developed a secondary infection. The possible tuberculous etiology for this secondary infection must not be overlooked in such instances.

The pulmonary markings as seen in the X-ray are of great importance in determining this point. Dunham, Boardman and Wolman¹⁶ studied these linear markings and hilus shadows and concluded that where these shadows were broader, denser and more beaded than normal they should be considered tubercular. In the slides which I will show these markings will be discussed. Of course, as the disease goes on to areas of caseation and softening there are still further causes for the congestion and swelling in the bronchioles, thus paving the way for an asthmatic condition.

From this survey and working upon the "non-passive expiratory theory," we have explained clinically and pathologically that localized foci of tuberculosis may, and from experience do, actually set up a localized or general asthma.

Before reading a few histories and showing some slides of X-ray plates, we should at least consider two other explanations of this asthmatic dyspnea. The theory more generally accepted in recent years was that there was set up a spasm of the bronchial muscles. The irritation causing this spasm, could very easily come from this latent or pretubercular infiltration at the hilus or in the peribronchial tuberculous tissue toward certain lobes.

Another explanation of this asthma, and least acceptable, it seems to me, is an anaphylactic status the result of the tubercle bacilli. In certain cases this may be the cause, for we know that the streptococci and other organisms are the cause of anaphylaxis. There are phases of more or less active splitting of the bacilli and their absorption and, consequently, periods of exacerbation of asthmatic dyspnea.

The localized areas of asthmatic breathing, I wish to emphasize again in conclusion. When we find persistent or repeated localized asthmatic breathing and musical rales in a lobe or lung, we should keep in mind the fact that there is probably a mechanical irritation and then inflammatory cause for it, and this cause is often tuberculosis in a very early or more advanced condition. It may be of considerable benefit in the early recognition of tuberculous disease. This has impressed me in several of the drafted men that I have had occasion to examine. The X-ray has shown definitely beginning tuberculous lesions. We should not be misled in our diagnosis by temporary disappearance of signs and symptoms for as the activity and intensity of the tuberculous area increases or di-

minishes, there will be an increase or diminution of signs.

Miss M. T., 20 years old. Expectored a teaspoonful of blood last night, and there have been streaks of blood in the sputum at the time of her menstruation for the last three months. She has had "bronchial trouble" for the last year. This has consisted in wheezing and expiratory dyspnea, especially while lying down or when particularly tired. At times this has been quite severe. She has had slight fever at times and has lost about 10 pounds. Physical examination shows markedly harsh breathing at both hiluses anteriorly and posteriorly, with increased harshness extending toward both apices, the left more than the right. The X-ray shows definitely enlarged bronchial glands and a fine infiltration extending up into both apices and a few tubercles extending downward from the right lower bronchus. Example of asthma as manifestation of pretubercular state.

Robert B., 9 years old. Attacks of asthma twice a month or oftener during the last two years. Condition so severe that he has lost considerable time from school. Has fever at times and has lost 13 pounds. Had had tonsils removed and four teeth were extracted as possible foci of infection. Although he had a moderate reaction to oatmeal and was somewhat relieved when this was discontinued in his diet, the signs remained very much the same. Examination showed diffuse asthmatic breathing with musical and sonorous rales slightly more marked on his right side. X-ray showed considerable hilus thickening increases in the linear markings and diffuse mottling throughout central part of both lung fields. Probable tuberculosis. Example of glandular tuberculosis as cause of asthma.

Philip D., 15 years old. Ever since he can remember has had colds with cough which is followed by wheezing and expiratory dyspnea. Attacks of asthma last two days to three weeks. Often perspires slightly at night and on a few occasions has had severe night sweats. Examination at first showed asthmatic breathing almost equal on both sides but more recently it is almost entirely confined to right chest. X-ray shows increase in hilus thickening on right side with slight thickening of the markings to both uppers with some slight infiltration of right apex. Suggestive tuberculosis as basis of bronchial asthma. Example of asthma more marked on one side than the other with X-ray confirmation.

Mr. N. T., age 46. Operated a dry drill in a gold mine six years, and since this time pick and shovel work. Had a slight hacking cough a good deal of this time but never paid any attention to it. Eleven months ago became much worse, following pleurisy, and sputum become purulent. For the last six or seven months has had almost constant and very distressing expiratory dyspnea. He volunteers the information that it comes entirely from the left side. Examination shows marked wheezing on his left side, almost none on his right. Harsher breathing at his left apex with many consonating rales. X-ray shows diffuse pneumoconiosis with denser infiltration at the left apex with probable cavity formation. Sputum positive for tuberculosis. Example of asthma complicating tuberculosis (one sided) implanted on pneumoconiosis.

Miss C. K., age 30. Attacks of asthma for 15 years with two years as the longest period of freedom. Eight and four years ago hemoptysis of one dram and one ounce. During that time lost from 125 pounds to 84 pounds. Now weighs 103. At present slight wheezing but no dyspnea. Has had every possible focus of infection searched and removed when found. Examination showed

16. Dunham, H. K., Boardman, W. W., Wolman, S.—Stereoscope X-Ray Examinations of the Chest with special reference to the diagnosis of Pulmonary Tuberculosis. Johns Hopkins Hospital Bulletin, vol. xxii, No. 245, July, 1911.

active tuberculosis at both apices with signs of cavity at the right apex. Elsewhere in the chest there was asthmatic breathing and musical rales. X-ray showed moderate infiltration both apices with a small cavity at the right apex. Asthma preceding active tuberculosis.

Miss N. D., age 24. Asthma as a child and up till ten years old. Then removed from sea coast and gradually during next five years it disappeared. Free from it for eight years till one year ago when it reappeared. Ten months ago severe pleurisy. Eight months ago hemoptysis of one pint. Wheezing and dyspnea very marked at this time. Less at present. Examination showed active tuberculosis at both apices with definitely prolonged expiration and musical rales in left upper lobe. X-ray shows marked infiltration in both apices with cavity at the apex. Example of asthma as evidence of probable bronchial tuberculosis as a child and its recurrence when the disease was again becoming active.

Mr. A. P., age 25. Periodic attacks of asthma during the last 14 years, more often at the end of the week. Last three to four days and length of entire freedom varies from one to three months. Every possible focus of infection has been investigated and whenever trouble was found it was removed, without as yet benefiting the asthma. Examination showed wheezing throughout both chests and scattered musical rales. X-ray showed marked hilus and peribronchial infiltration with definite dense areas in both apices. These seem definitely tubercular to me. Example of frequent asthmatic attacks and evidence of apical tuberculosis.

Mrs. O. Five years ago asthma and tuberculosis were both discovered. At this time asthma was not severe but two years ago it became very disturbing. Since coming to Arequipa Sanatorium only has occasional wheezing spells. Examination has always shown prolonged expiration and musical rales, very much more marked on the right side than on the left. There are signs of cavity at the right apex and more often consonating rales on the right side than on the left. X-ray shows a moderate infiltration on the left side with a more marked infiltration on the right, especially in the upper and middle lobes, with a large cavity at the right apex. Example of persistent asthmatic breathing confined to the side of chief involvement.

Miss C. C. As a child always had wheezing with colds, but no difficulty in breathing. Two and a half years ago grippe, which led to the discovery of tuberculosis. For last 14 months wheezing only occasionally. If severe the wheezing seems to bring on coughing spells and with this a rosy expectoration. Examination has always shown more prolonged expiration and musical rales in her right middle and lower lobes than elsewhere. Sputum has been positive for tuberculosis. X-ray shows chiefly a fibrous tuberculosis and more marked in the right middle and lower lobes. Example of localized persistent asthmatic breathing in a tuberculous individual.

Mrs. A. Perfectly well till one year ago, when asthma began. This was very genuine, with difficult and prolonged expiration and rosy expectoration. Six months ago this was helped by some salty medicine, but at the same time she began to have fever, sweats and purulent expectoration. Examination showed active signs of consolidation and cavity on the left and a small amount of latent activity on the right. X-ray confirmed these findings. Pneumothorax was artificially induced and she has had no asthma since. Her tuberculosis is also very much improved.

Tuberculin is indicated in certain cases where there is chiefly a latent tuberculosis. Pneumothorax may be used where the disease is more active and confined to one side. Potassium iodide, at least theoretically, is contraindicated because of its possible action of breaking down tuberculous tissue.

THE VALUE OF RENAL FUNCTIONAL STUDIES IN THE PROGNOSIS AND TREATMENT OF NEPHRITIS.*

WITH SPECIAL REFERENCE TO THE RENAL TEST DIET.

By SAMUEL H. HURWITZ, M.D.

Assistant Clinical Professor of Medicine, University of California, San Francisco.

INTRODUCTORY.

No addition to our knowledge of any group of diseases can be without significance for prognosis and treatment. One need only glance at current medical periodicals to be convinced of the time and effort which is now being given to the study of kidney function. So much work has surely, by this time, produced some results which the practitioner of medicine can use for the benefit of his patients. General practitioners wish to know those tests which are of practical value and those which are of academic interest. The number of tests has multiplied so rapidly within recent years that considerable uncertainty concerning their mode of application and their interpretation prevails in the minds of those who would employ them. Functional tests will become more generally used and hence of more value when we know which ones can be discarded without loss, and which combination of tests (the smaller, the better) will yield all the information necessary in any given type of disease.

In interpreting functional tests physicians have had a tendency to make the judgment of laboratory findings too precise, and to place too much emphasis upon the knowledge gained from them. Such a tendency will go far to make the physician mechanical in the interpretation of the facts laid before him and to lead him astray. It has become clear to those who with care are in the habit of correlating laboratory with clinical observations that no functional test can be used as direct evidence for the diagnosis of the anatomic or etiologic type of disease present, but only indirectly as an assistance to the experienced in arriving at a final judgment. While a correct anatomical diagnosis is always desirable, it is of no especial importance in determining prognosis and treatment. What is of practical value to the general practitioner is a knowledge of the kind and degree of functional damage.

METHODS OF TESTING KIDNEY FUNCTION.

During the past few years, renal functional capacity has been studied chiefly in one of two ways: first, by testing the excretory capacity through the quantitative determination of the eliminative power of the kidneys for various substances in the urine, either foreign substances like phenolsulphonephthalein or the normal urinary constituents,—water, salt, and nitrogen; second, tests of retention through quantitative determination of the concentration of certain substances in the blood, either non-protein nitrogen as a whole or one of the

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substances which compose it,—uric acid, urea, and creatinine.

Of these phenolsulphonephthalein is doubtless the most widely used. In fact, some may have been inclined to believe that the 'phthalein test is the only method now employed in our hospitals in the investigation of patients with nephritis, or other renal affections. The great popularity of phenolsulphonephthalein is justly due to the remarkable rapidity and completeness with which it is eliminated by the kidney, to its nontoxicity, and to the ease with which it lends itself to colorimetric estimation.

Whereas failure to excrete 'phthalein empirically signifies an incapacity on the part of the kidney to carry on its work, hence a bad prognosis, this fact tells us little concerning the nature of the impairment and how best to cope with it. In other words, this knowledge does not give us all the assistance which we wish in the management of our patients. Furthermore, it is a matter of clinical observation that the diseased kidney may retain water, salt, urea or any of the normal urinary constituents and yet allow phenolsulphonephthalein to pass through, at times even in excessive amounts. This fact, however, does not lessen the general usefulness of this test. It merely serves to emphasize the fallacy of a conception of kidney activity as an entity, all of the component physiologic parts of the organ increasing or diminishing synchronously, and to strengthen the view of a "dissociated" renal function, the glomeruli and the various subdivisions of the uriniferous tubules having widely varying physiologic functions and being affected to an unequal degree by the manifold renal and extrarenal factors which may impair the functional capacity of the kidneys.

Our aim therefore should be to ascertain not only the general eliminative power of the kidneys, but also the nature of the impaired function. This knowledge is essential if we are to safeguard the damaged organ and to direct our treatment intelligently toward the amelioration of the symptoms which depend upon disordered function. From the therapeutic standpoint, therefore, studies of the excretion of those substances,—water, salt and nitrogen, which the kidney is normally called upon to eliminate have given more valuable information, and it is the practical usefulness of such tests which it is my purpose to emphasize in this paper.

RENAL FUNCTION AS MEASURED BY THE ELIMINATION OF FLUIDS, SALT AND NITROGEN.

The normal kidney quickly responds to the ingestion of water, salt and nitrogen by eliminating these substances promptly and in good amount. Such a kidney, therefore, yields a urine of medium, low, or high specific gravity according to the proportion of fluids and solids that must be excreted in order to maintain the composition of the body fluids at a constant level. The diseased kidney, on the other hand, loses this flexibility, and the power to answer a demand for a more concentrated or a more dilute urine is lost. In disease the concentration of the urine remains permanently at the same height and the specific gravity becomes

fixed. This latter phenomenon is so constant an accompaniment of impaired renal function and is so readily demonstrated that we shall no doubt come to regard a study of the diseased kidney as incomplete without this observation.

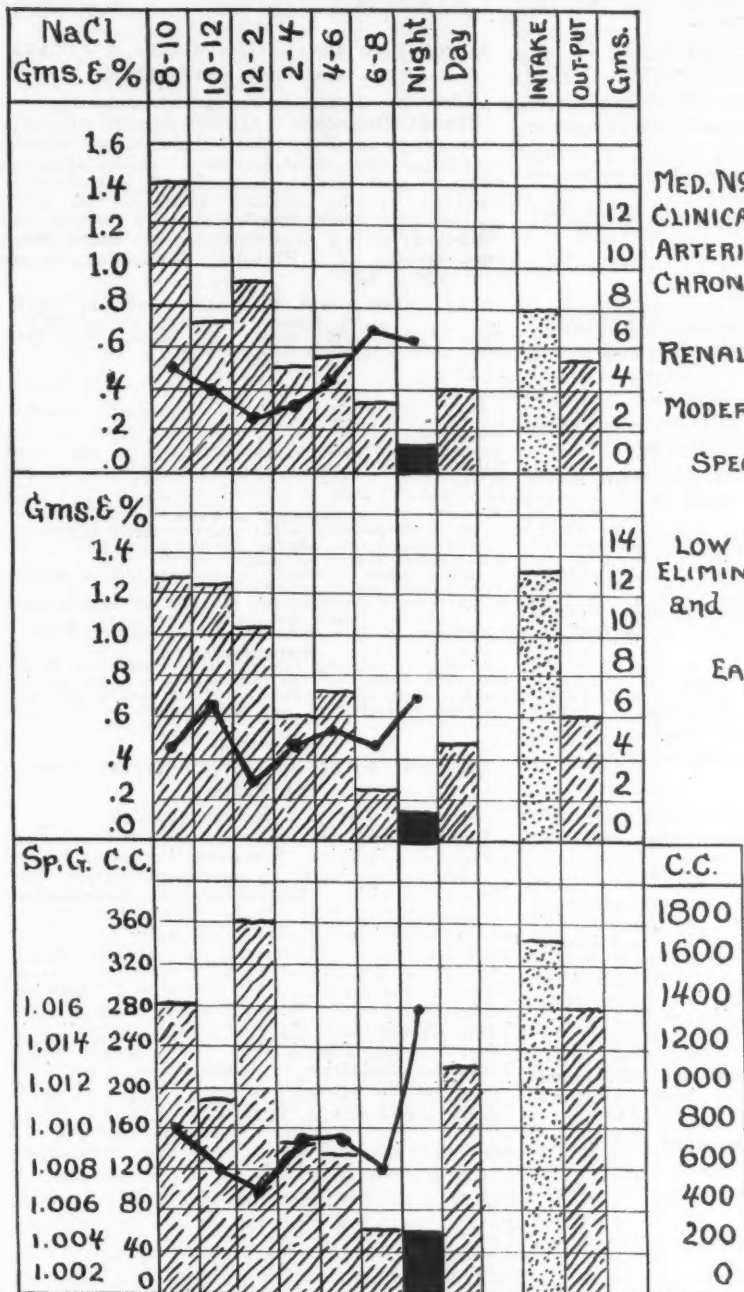
In practice, this mode of testing kidney function is carried out by giving the patient a diet containing a known amount of fluid, salt, and protein. The only requirement of such a diet need be that the amounts of the various food stuffs be known and that it contain a sufficient quantity of the diuretic substances of our ordinary food to make an adequate demand upon the kidney. The arrangement of such a diet is very simple in hospital practice, and not difficult in private practice. In the latter instance, it would only be necessary to ask the patient to eat three full meals, and to write down the approximate quantities of each article taken. It should be emphasized, however, that no solid food or fluid of any kind must be taken between meals nor during the night.

While the patient is on such a diet, the urine is collected punctually every two hours during the day, and a twelve-hour specimen is collected at night. The water, salt and nitrogen of the collected specimens may now be determined and from these, information of value may be obtained as to the character and degree of the functional impairment. The simple procedure, however, of measuring the volume of urine and the specific gravity yields data of the greatest importance concerning the functional capacity of the kidneys. The quantitative chemical determinations need be resorted to only when more detailed knowledge is desired either for diagnostic or therapeutic purposes.

A study of many patients by Mosenthal with a renal test dietary of this kind has shown that the normal kidney responds in a definite and constant way, and that the various types of renal and cardio-vascular-renal disease also show distinct types of excretion. Such tests in fact have assisted greatly in determining the part played by renal insufficiency in the symptom complex which may characterize this disease group. For purposes of clearness of presentation I have enumerated the main features to be noted in each type of response, and from a large number of patients studied in this way in the medical wards of the University of California Hospital, I have selected a few which illustrate these points of difference.

RESPONSE TO RENAL TEST DIET IN HEALTH AND IN DISEASE.

Normal Response to Renal Test Diet 1. Variations in specific gravity of two-hourly specimens of urine. Average variation should be 10 points or more. 2. No tendency to polyuria or oliguria. 3. Night urine small in amount (400 c. c. or less), regardless of the quantity of the fluid ingested or the amount of urine voided during the day. Specific gravity of night urine usually high (1.016 to 1.018 or higher). 4. Balance between the output and intake of salt, nitrogen and fluids should be approximately equal.



MED. NO 13615.

CLINICAL DIAGNOSIS:
ARTERIO-SCLEROSIS,
CHRONIC NEPHRITIS

RENAL TEST DIET.

MODERATE FIXATION
OF
SPECIFIC GRAVITYLOW PERCENTAGE
ELIMINATION OF SALT
AND NITROGENEARLY HYPERTENSIVE
NEPHRITIS

Table 1

NORMAL RESPONSE TO RENAL TEST DIET

Med. No. 16361, J. W., Age 33, male.

Clinical Diagnosis: Thrombosis of central vein of retina. Blurred, defective vision in left eye for a month. No symptoms of nephritis. **Fundi:** O. D. Normal. O. S. Disc swollen, oedematous, edge indistinct and blurred; retinal veins dilated and tortuous; flame-shaped and petechial hemorrhages. **Heart** not enlarged; sounds normal. **Pulse** rate 68. **Blood pressure**, systolic, 130. **Urine examination;** sp. grav. 1020; albumin and sugar absent; few hyaline casts. **Phthalein elimination** (Feb. 11) 70 per

cent. in 2 hrs. **Urea Nitrogen:** (Feb. 15) 13 mgm. per 100 c. c. of blood.

DATA AFTER RENAL TEST DIET—FEB. 14, 1918

Time of Day	c. c.	Sp. G.	NaCl		N	
			%	Gms.	%	Gms.
8-10	350	1.012				
10-12	190	1.020				
12-2	180	1.019				
2-4	110	1.022				
4-6	85	1.022				
6-8	125	1.017				
Total, Day	1040	1.019				
Night, 8-8	666	1.020	0.7	5.4	0.8	7.5
Total, 24 hrs	1706			4.6		5.2
Intake	1760			10.0		12.7
Difference	+54			8.5		13.4
				-1.5		+0.7

Summary of Table.

1. Normal water balance—no polyuria or oliguria.
2. Normal polyuric response to night meal.
3. No fixation of specific gravity—maximum variation 10 points.
4. Night urine normal in amount and of high specific gravity.
5. Normal percentage output of salt and nitrogen in night urine.
6. No retention of water, salt and nitrogen in 24-hour specimen; moderate increase in elimination of salt.

Interpretation.

Normal response to renal test diet in a patient with suspected nephritis.

RESPONSE TO RENAL TEST DIET IN HYPERTENSIVE NEPHRITIS.

(Primary and Secondary Contracted Kidneys.)

1. Markedly fixed and low specific gravity.
2. Tendency to total polyuria.
3. Night urine increased in amount, of low specific gravity, and containing low concentration of nitrogen.
4. Diminished output of both salt and nitrogen.

RESPONSE TO RENAL TEST DIET IN CHRONIC NEPHRITIS WITH EDEMA.

A. During the formation of Edema. 1. Moderate fixation of specific gravity. 2. Oliguria. 3. Night urine increased in amount (nocturnal polyuria), of normal specific gravity, and with good percentage elimination of nitrogen. 4. Marked retention of salt and water.

B. During elimination of Edema. 1. Moderate fixation of specific gravity. 2. Polyuria. 3. Night urine increased in amount. 4. Quantity of salt eliminated may be double the amount ingested.

Table 2

RESPONSE TO RENAL TEST DIET IN A PATIENT WITH SUBACUTE NEPHRITIS

Med. No. 15632, R. H., age 23, male.

Clinical Diagnosis: Henoch's purpura; arthritis; subacute nephritis. **Symptoms:** Acute onset 2½ weeks before admission with constipation followed by bloody diarrhoea and purpura 2 days before admission. No symptoms of nephritis until Dec. 14. **Cardio-vascular system** negative; **Blood pressure**, systolic, 120. **Urine Examination** (Dec. 5 and 13), a rare hyaline cast; (Dec. 22), heavy trace of albumin; (Dec. 24), 3.7 gms. albumin per liter, granular and blood casts. **Phthalein Elimination** (Dec. 23-Jan. 24), 30-42 per cent. in 2 hrs. **Urea nitrogen** (Dec. 26), 15 mg. per 100 c. c. blood.

DATA AFTER RENAL TEST DIET—JAN. 18, 1918

Time of Day	Urine		NaCl		N	
	c. c.	Sp. G.	%	Gms.	%	Gms.
8-10	175	1.012				
10-12	120	1.014				
12-2	160	1.015				
2-4	185	1.013				
4-6	120	1.015				
6-8	190	1.015				
Total, Day	970	1.014		2.4		6.2
Night, 8-8	460	1.016	0.3	1.4	0.7	3.2
Total, 24 hrs.	1430			3.8		9.4
Intake	1760			8.5		13.4
Difference	+330			+4.7		+4.0

Summary of Table.

1. Moderate fluid retention; water balance positive.
2. Normal polyuric response to meals.
3. Well-marked fixation of specific gravity; maximum variation 3 points.
4. Night urine of normal high specific gravity; low percentage output of salt; almost normal percentage output of nitrogen.
5. Marked retention of both salt and nitrogen in 24-hour period.

Interpretation.

Well-marked grade of renal impairment in a patient with subacute nephritis. The functional defect is especially noticeable in the inability of the kidney to eliminate the ingested salt.

Table 3

RESPONSE TO RENAL TEST DIET IN A PATIENT WITH ESSENTIAL HYPERTENSION

Med. No. 15942, L. S., age 67, male.

Clinical Diagnosis: Arteriosclerosis; hypertension; gangrene of right foot. Pain in toes of right foot for 3 yrs.; slight oedema of ankles and nocturia for past several years. **Heart**, is moderately enlarged; systolic murmur; aortic second sound accentuated. **Blood vessels:** Arteries tortuous and thickened; retinal vessels tortuous. **Blood Pressure**, systolic, 195. **Phthalein Elimination**, 30 per cent. for 2 hrs.

DATA AFTER RENAL TEST DIET—JAN. 14, 1918

Time of Day	Urine		NaCl		N	
	c. c.	Sp. G.	%	Gms.	%	Gms.
8-10	158	1.014				
10-12	96	1.016				
12-2	132	1.021				
2-4	lost	lost				
4-6	302	1.011				
6-8	222	1.011				
Total, Day	910	1.014	0.4	3.64		6.3
Night, 8-8	1010	1.015	0.5	5.55	0.65	6.5
Total, 24 hrs.	1920			9.19		13.3
Intake	1760			8.5		13.4
Difference	-160			-0.69		+0.1

Summary of Table.

1. Moderate polyuria; slight negative water balance.
2. Normal polyuric response to meals.
3. Moderate fixation of specific gravity.
4. Night urine, increased in amount and of slightly lowered specific gravity.
5. Percentage elimination of salt and nitrogen in night urine well below the normal 1 per cent.
6. Balance of water, salt and nitrogen about normal.

Interpretation.

Moderately impaired function in an early case of hypertensive nephritis. The test diet shows a low specific gravity, a marked nocturnal polyuria, and a low percentage elimination of salt and nitrogen in the night urine.

Table 4

RESPONSE TO RENAL TEST DIET IN HYPERTENSIVE NEPHRITIS

Med. No. 16455, I. B., age 51, male.

Clinical Diagnosis: Chronic nephritis with hypertension. **Retinitis.** **Symptoms** for several years: Headaches, dizziness, dyspnoea, palpitation, and blurring of vision. **Ophthalmoscopic Examination.** O. D. shows patch of atrophic retinitis, and several small hemorrhagic spots. O. S. nerve head indistinct and patch of hemorrhagic retinitis. **Heart**, 12.5 cm. to left. Faint diastolic murmur at apex. Aortic second roughened and accentuated. **Arteries**, moderate sclerosis. **Blood pressure**, systolic, 270. **Urine Examination:** Specific gravity 1012; albumin 0.4 per cent.; few hyaline and granular casts. **Phthalein elimination** (Feb. 20), 15 per cent. in 2 hrs. **Urea Nitrogen**, 19 mgm. per 100 c. c. of blood.

DATA AFTER RENAL TEST DIET—FEB. 22, 1918

Time of Day	Urine		NaCl		N	
	c. c.	Sp. G.	%	Gms.	%	Gms.
8-10	138	1.010				
10-12	108	1.011				
12-2	150	1.010				
2-4	360	1.008				
4-6	175	1.010				
6-8	295	1.006				
Total, Day	1226	1.009		4.9		5.1
Night, 8-8	590	1.012	0.4	2.3	0.6	4.2
Total, 24 hrs.	1816			7.2		9.3
Intake	1760			8.5		13.4
Difference	-56			+1.3		+4.1

Summary of Table.

1. Total polyuria; negative water balance.
2. Fixation of specific gravity; maximum variation 5 points.
3. Delayed polyuric response to meals.
4. Night urine increased in amount and of low specific gravity.
5. Percentage output of salt and nitrogen in night urine diminished.
6. Slight retention of salt and well-marked retention of nitrogen.

Interpretation.

The slight total polyuria and moderate nocturia with the tendency toward the fixation of the specific gravity and low percentage output of salt and nitrogen at night point to moderate renal impairment. There is, however, some variation in the urinary volume after meals, although this is considerably delayed after the noonday meal.

RESPONSE TO RENAL TEST DIET IN MYOCARDIAL INSUFFICIENCY (RENAL CONGESTION.)

1. Fixation of specific gravity at high level (about 1.020). 2. Oliguria. 3. Night urine about normal in amount, of high specific gravity and containing a normal concentration of nitrogen (above 1 per cent.), but a low percentage output of salt. 4. Normal nitrogen balance with a diminished output of salt.

Table 5

RESPONSE TO RENAL TEST DIET IN A PATIENT WITH MYOCARDIAL INSUFFICIENCY

Med. No. 16055, H. S., age 65.

Clinical Diagnosis: Chronic myocarditis; auricular fibrillation; decompensation with passive congestion of liver, spleen and kidneys. **Symptoms:** Attacks of dizziness, shortness of breath, and syncope for 6 months; oedema of legs for 5 weeks. **Heart:** 12 cm. to left in 5th interspace; sounds irregular; systolic murmur. **Blood Pressure,** systolic 150 (?). **Lungs,** oedema of bases. **Liver,** large, tender, palpable. **Urine examination:** Albumin 0.3 per cent.; granular and hyaline casts. **Phthalein elimination** (Jan. 16), 30 per cent. in 2 hrs. **Urea Nitrogen** (Jan. 18), 8 mg. per 100 c. c.

DATA AFTER RENAL TEST DIET—JAN. 21, 1918

Time of Day	Urine		NaCl Gms.	%	N Gms.
	c. c.	Sp. G.			
8-10	124	1.021			
10-12	120	1.021			
12-2	60	1.025			
2-4	154	1.022			
4-6	46	1.023			
6-8	68	1.025			
Total, Day	572	1.022	0.9	5.4	0.7
Night, 8-8	514	1.022	0.8	4.1	0.8
Total, 24 hrs.	1086		0.8	9.5	0.75
Intake	1760			8.5	13.5
Difference	+674			-1.0	+4.9

Summary of Table.

- Oliguria; positive water balance.
- Fixation of specific gravity at high level.
- Normal polyuric response to noonday meal.
- Night urine moderately increased in amount; of high specific gravity; normal percentage output of salt and nitrogen.
- Retention of nitrogen but not of salt.

Interpretation.

The response of the kidneys to the renal test diet is characteristic of renal congestion: Oliguria, fixation of specific gravity at high level, and a night urine essentially normal in character.

Of the features enumerated the following are the most constant signs of a diminished function and therefore the more reliable. 1. A lowering of the maximal specific gravity; 2. A fixation of the specific gravity; 3. A nocturnal polyuria; 4. A low percentage of salt and nitrogen in the night urine.

Whereas the reliability of the inferences gained from the total balance of salt and nitrogen may depend in large measure upon the care and accuracy with which the diet is administered, this is not true of the concentration of these substances in the night urine. From this observation alone we may obtain information of the greatest importance in the management of patients.

It should be emphasized further that although the study of renal function by means of these dietary studies gives us some knowledge of the distribution of the structural changes, it is impossible to make refined anatomical diagnoses on the basis of functional tests. This test as well as the others which we are now using measure for the most part total renal function. They do indi-

cate at times preponderance of injury in one or another of the renal structures, and it is the knowledge gained from such selective renal excretory capacity that makes possible to a certain extent the grouping of our clinical patients, and the utilization of such divisions as guides to treatment.

THE RENAL TEST DIET AND PROGNOSIS.

The renal test diet gives the earliest positive signs of renal damage, and it is therefore the most delicate indicator of renal function which we possess in the early cases of nephritis, in that it will show disturbances at a period before the 'phthalein test, or before there is any retention of uric acid, urea, or creatinine in the blood. In the later stages, however, it gives little additional information not obtained from the latter tests, because the renal test diet shows its maximum effect relatively early in the development of a renal insufficiency, and the response changes but little with the progress of the lesion.

Although of great help, therefore, in the early diagnosis of renal functional impairment, the value of the dietary test as a prognostic aid is lessened because of its very delicacy. It has been found, for instance, that in a large number of extra-renal conditions,—pyelitis, cystitis, hypertrophied prostate, marked anemia and a few other conditions, the eliminative power of the kidney for fluids, salt, and nitrogen may be impaired, although the kidney itself may be free from damage. Hence it should be emphasized that, when such evidence of functional damage is obtained, searching examination must be made for extra-renal causes or the curable renal lesions, especially a severe anemia, an hypertrophied prostate or other cause for urinary obstruction. Thus, the prognosis, so far as the results of the renal test diet are concerned, becomes dependent upon the cause of the functional impairment, and not upon its degree. We may anticipate, therefore, that the removal of a curable renal lesion will be followed by great functional improvement, while the persistence of an impaired eliminative power after the removal of all possible extra-renal causes would be strong evidence of the existence of chronic inflammatory changes in the kidney itself, a finding which would alter materially our prognosis and the management of the patient.

THE RENAL TEST DIET AS A GUIDE IN THE TREATMENT OF NEPHRITIS.

It is hardly to be expected that even the earliest discovery of a functional disorder should lead to brilliant therapeutic results when the underlying lesions are essentially progressive. All that we may hope for is to safeguard the damaged organ and to prevent in a measure the development of advanced anatomical changes. In no way can this be accomplished better than by the regulation of the diet of nephritic patients. And as a result of the information gained from such functional studies as I have outlined, we can now base the management of our patients upon the individual requirements of the case and not upon so-called general principles.

THE RESTRICTION OF FLUIDS IN NEPHRITIS.

The management of the water balance is of especial importance in acute nephritis and in that type of chronic kidney disease in which vascular irritability and the tendency to polyuria are such striking features. In this type of renal lesion (primary contracted kidney) polyuria is an evidence of a slight or early disturbance of the kidney vessels, and this results in the elimination of a urine having a low specific gravity and a low concentration of salt and nitrogen, even though the ability of the kidney to excrete *added* salt and nitrogen is not itself disturbed. It is for this reason that in the treatment of chronic nephritis of the arteriolar type Von Noorden has always insisted on the danger of abusing water. It is to him and his associates that we owe the demonstration that the conventional milk diet for nephritis, while empirically successful is irrational because of its excessive content of fluid and protein, and that the constant over-stimulation of the kidney by so apparently harmless a diuretic as water may entail danger to the integrity of the kidney's vascular functions.

While, therefore, some restriction of fluids may be indicated in every patient with nephritis, it is necessary to discriminate not merely in regard to the type of case where such restriction is indicated but also the amount of fluids allowable. Whenever there is any doubt, it is well to determine in every instance the permeability of the kidney to water, and to measure carefully the fluid intake and output. Such knowledge is especially helpful in the management of patients where edema is absent or at most only very slight. When, however, the kidney is obviously impermeable to water as shown by the presence of marked edema the ingestion of fluids above the amounts absolutely necessary to meet the body's needs will only increase the edema.

THE RESTRICTION OF SODIUM CHLORIDE IN NEPHRITIS.

There is perhaps no one therapeutic measure which has worked such hardship upon nephritic patients as the absolute restriction of salt over long periods of time; and yet there is no simple and more effective weapon in the edematous types of subacute and chronic nephritis. It is common knowledge that a patient with renal edema, who has been partaking freely of salt loses rapidly in weight when placed upon a salt-free diet. The abuse of this important therapeutic measure is to be attributed rather to its indiscriminate application to every nephritic without previously ascertaining the permeability of the kidney to salt in the individual instance.

As in the case of fluid restriction so here also the one essential guide to treatment is the absolute salt balance. Only from a graphic record of daily salt intake and output can one obtain any exact knowledge concerning salt retention. The management of the salt intake in nephritis is analogous to the carbohydrate intake in diabetes. In patients with renal edema, salt ingestion should be

kept at a minimum as long as the edema persists. After the absorption of the edema, the ability of the kidneys to eliminate *added* salt should be tested occasionally, and the intake increased correspondingly as the eliminative power of the kidneys is restored. The exact estimation of the sodium chloride tolerance or a determination of the ability of the kidney to concentrate salt makes possible an intelligent adjustment of the salt intake. If this be maintained at a level just below the ability of the kidney to excrete salt, chronic nephritics may be kept free from edema and in a state of comfort over long periods of time.

THE RESTRICTION OF PROTEIN IN NEPHRITIS.

In some patients with nephritis, especially in those who show clinically high blood pressure, uremic symptoms and absence of edema, the kidney is unable to eliminate nitrogenous substances. This lowered permeability for the nitrogenous constituents of the urine forbids a high protein ration, for these substances tend to accumulate in the blood burdening the kidney unduly and indeed affecting the entire organism.

Because of the fear of nitrogen retention clinicians have for the most part played safe and have restricted the ingestion of protein in all types of nephritis. This blind application of a general principle to fit the needs of all patients has, as in the instance of salt restriction, worked unnecessary hardship upon many nephritics. This has doubtless been the case in many patients with that type of renal impairment with edema and with or without hypertension (chronic parenchymatous nephritis; nephrosis). Such patients, as we now know, show no nitrogen retention, the kidneys having retained their power to eliminate nitrogen. Here the defect is attributable primarily to a salt and water impermeability. Then too we must bear in mind that the nitrogen elimination may be normal in nephritics with hypertension and without edema. Therefore, if we are to carry out a rational dietetic treatment for the individual patient, we must have some knowledge concerning the ability of the kidney to eliminate not only the ingested fluid and salt but also the nitrogen constituents.

Extreme restriction of protein is advisable only in the acute stages of nephritis, and then only for short periods of time. The withdrawal of protein from metabolism must not be prolonged because the nephritic can not get along safely upon a smaller amount of protein than a healthy person. If protein is not administered in requisite amounts, the patient will draw upon his body protein.

A safe rule to follow is to restrict the protein to the minimum amount required by the body. A protein intake of one-half or three-fourths of a gram per kilogram of body weight is as low a protein intake as is compatible with health. This means that a patient weighing one hundred and fifty pounds should have from forty to fifty grams of protein a day. Should the severity of the condition warrant a further reduction, it is important to spare the body protein and maintain weight by the liberal addition to the diet of carbohydrates

and fats. When on such a diet, the ability of the kidneys to eliminate *added* nitrogen should be tested from time to time. Further additions to the protein of the food may be made from time to time as the excretory function is restored. The weight and health of chronic patients may be satisfactorily maintained by adjusting the protein intake at a point below the eliminative power of the kidneys for the ingested nitrogen.

Studies of the permeability of the kidneys for fluids, salt, and nitrogen are therefore of great assistance in the laboratory control of nephritis. They aid in visualizing the actual daily response of the kidney to our therapeutic measures and they guide us in the management not only of the disease, but of the individual patient.

Discussion.

Dr. H. D'Arcy Power, discussion: It has been possible during the past year to collect data in a great many cases in the Polyclinic Service of the San Francisco Hospital bearing on the question of the importance of the night urine as compared with the total output of urine, with the result that I am more and more convinced of the value of this symptom as a diagnostic test of the existence of incipient renal disease. In many cases far ahead of the finding of casts or albumin we were able to find differences in the direction of an abnormal output of night urine and low specific gravity which later developed marked renal symptoms and some of them were confirmed at autopsy.

I have not the list of these cases with me, but at the next meeting I hope to bring the same. And I would remark here that it is quite possible to form a fairly good judgment upon the ordinary menu, merely taking care that the patient has been one or two days at rest and regularly fed. In some ways the normal diet seems to me to have advantages over one that is artificially constructed.

SCHISTOSOMIASIS IN CALIFORNIA.*

ALFRED C. REED, M. D., San Francisco,
Clinical Instructor in Medicine, Stanford University
Medical School.

The group of diseases classified under the term schistosomiasis have this in common, that they result from infection of the portal system with some variety of the schistosomidae family of trematode or leaf-like worms. This particular family is distinguished by having sexually distinct adult forms, in place of the usual hermaphroditic forms, and by producing non-operculated ova. Three clinical types of schistosomiasis are observed, corresponding to the three species of schistosomidae. The distribution, prognosis and natural history of these three types differ considerably. The method of spread, manner of human infection, character of intermediate host, and sanitary significance, are similar.

In all three forms the chief pathological features arise from the deposition of the irritating eggs, or their conveyance as emboli through the blood stream. All are characterized by a peculiar type of inflammatory reaction, and the formation of characteristic fibrous tissue deposits containing egg clumps and round cell infiltration. The chief site of these pathological changes is in the lower bowel,

the urinary bladder, or the hepato-portal system, depending on the variety of infection.

For many years schistosomiasis was known in Egypt under the guise of endemic hematuria, until finally in 1851 Colonel Bilharz of the Royal Army Medical Corps described the parasitic cause. His name was applied to the parasite and to the disease, viz.: Bilharzia and Bilharziosis. Some 52 years later, in 1903, Sir Patrick Manson described a differing species in the West Indies, in cases of schistosomiasis presenting intestinal, rather than vesical, symptoms. The species *S. Mansonii* was established by Sambon four years later. The third or Japanese species was described by Katsurada in 1904, after the clinical disease had been under observation by Japanese physicians for several years. We have, then, three types—first, the endemic hematuria of Bilharz, with the bladder chiefly affected; second, the Mansonian or rectal form, and third, the Japanese infection, where the liver, portal system and intestine are involved together.

The vesical type, or Bilharz disease, occurs chiefly in Egypt and other sections of Africa and the Mediterranean littoral. It has a scattering distribution in south Asia and the West Indies. The rectal or Mansonian type is found in Egypt, Central and South America, central and south Africa and the West Indies. Sporadic cases are not infrequent on the Atlantic and Gulf coasts of the United States. The Japanese disease is endemic in certain provinces of Japan, and in the lower Yang-tze valley of China. A few sporadic cases have been reported elsewhere, and some two or three have been imported into the United States.

The geographic survey thus reveals that schistosomiasis is a disease of wide tropical and Oriental distribution, and that its endemic habitat is a possible menace to the United States in two general areas. There is constant possibility of trans-Pacific importation of the Japanese variety by immigrants or returned citizens from China or Japan. There is constant probability of importation of the African types from the West Indies, Central and South America, as well as from the Mediterranean countries and Africa. Several cases have come by way of Hawaii, through Portuguese and Spanish laborers.

The clinical picture of schistosomiasis is fairly distinctive and essentially unlike diseases of cold climates. The Mansonian or rectal type shows itself symptomatically as a chronic dysentery, accompanied by mucus, blood and tenesmus. There is frequent enlargement of the liver and spleen, although not so uniform or extensive as in the Japanese disease. There is an enormous proliferation of Bilharz tissue, consisting of dense cellular infiltration with development of fibrous tissue. This results in excessive thickening and lobulation of the intestinal wall, and the production of sacculations and pseudo-adenomatous polyps, which may even extrude from the anus. In this tissue the ova are found embedded, and rupture of egg nests through ulceration of the bowel wall leads to their appearance in the stools. The fibrous peritoneal infiltration, thickened bowel wall and papillomatous

* Read before the Forty-seventh Annual Meeting of the Medical Society of the State of California, Del Monte, April, 1918.

formations, may often be palpated through the abdominal wall. The worms, which are resident in the ramifications of the portal vein, seek the intestine by preference for deposition of ova. Occasionally the ova become free in the blood stream, where they act as emboli or may set up local irritation elsewhere, as, for example, in the lungs. Clinically, the eggs of the Mansonian worm appear characteristically in the stools and are distinguished by having a single lateral spine.

The Bilharzian or vesical type of schistosomiasis shows itself symptomatically as a recurrent, apparently causeless, hematuria. Often there is no other symptom than hemorrhage for a time. Then comes the gradual increase of Bilharz tissue in the urinary tract, and especially in the bladder. Vesical hypertrophy, polyp formation, lithiasis, cystitis, prostatitis, and all the sequent disorders which may arise from such a pathology. Fistulous communications appear. Ascending renal infection and septicemia are not uncommon.

The Japanese type of schistosomiasis was described at length by the writer¹ in 1915. Nine cases under personal observation in the Yale Hospital in central China were reviewed. Clinically, this variety exhibits three stages. The first is known as urticarial or river fever, or kabure. It is manifested in an urticarial eruption accompanied by fever, lasting three to six weeks, and is typically acute with no serious organic involvement. The second or transition stage, in case of heavy or repeated infection, marks the approach of the chronic cachexia and gross anatomical changes. With this transition there is an advancing and painless enlargement of the spleen and liver, and slight recurring febrile attacks. The splenic tumor may extend well below the umbilicus. With developing cirrhosis, the liver is apt to decrease in size, but the added portal retardation causes still further splenic hypertrophy. Recurring periods of more or less severe dysentery are in evidence, and gradually a progressive cachexia is established. This stage is essentially chronic, lasts one to five years, and merges into the third and terminal stage, which is characterized by cirrhotic contraction of the liver with ascites.

In the third stage diarrhea is less pronounced, there being only occasional periods of increased bowel movement without tenesmus and with little evidence of ulceration, although even here ulceration may be a prominent feature. Ascites and anasarca steadily advance. Emaciation and languor increase. The patient becomes apathetic. The liver retreats behind the costal margin. Digestive troubles appear. The splenic tumor becomes massive. A fatal issue is assured after an indefinite time, usually measured in years. Death may follow general debility, or, more, often, a terminal infection.

In all forms of schistosomiasis, curative treatment is unknown. Symptomatic relief can be given, especially where mechanical improvement is possible in the advancing pathology. In the Japanese disease in China a large variety of drugs was employed with no evident effect. Quinine has been

advocated, but was useless in our cases. Salvarsan, emetin, thymol, santonin, aspidium, copper sulphate, hexamethylene, salol, soamin, mercury, iodides, and arsenic were equally useless. Temporary improvement was sometimes seen after the use of iron, nux vomica and ginger, evidently a symptomatic benefit only. The specific curative must meet the indication of killing the adult trematodes which are free in the portal circulation, and this with no serious injury to the human host. No such drug is thus far known.

Except so far as symptomatic relief is possible, treatment resolves itself into prophylaxis. Prognosis depends primarily on continued residence in an endemic area, with opportunity for constant or repeated re-infection. In all forms of the disease the danger varies directly with the degree of infection and repetition of infection. Europeans are as subject as natives, if similarly exposed. Schistosomiasis does not necessary progress to a fatal issue. With no re-infection there is reason for believing that the parasites may disappear after a number of years, and the body return to normal, except in so far as organic changes have supervened. In the Japanese disease, for example, persons exposed to a single infection may undergo only the stage of urticarial fever, although possibly for years dispensing the ova as carriers. A fatal termination is practically assured, on the other hand, when the victim has reached the third stage.

Five cases of schistosomiasis have come under observation in the Stanford medical service in the past two years. Of these, four were of the Mansonian type and one was Bilharzial. In addition to these, Dr. Herbert Gunn in 1906 (J. A. M. A., Apr. 7, 1906) reported three cases in San Francisco, and in a personal communication states that since this date he has had under observation ten additional cases, making a total of thirteen cases.

Case 1. M. F. Female, Portuguese, aged 30, native of Madeira, came to the United States five years ago. Housewife and cook in occupation. Her husband is a Portuguese, who has a clonorchis infection. She complained of hunger pain, relieved by eating, coming on about two hours after meals, and radiating from the epigastrium to the lower dorsal region. Sometimes the pain was constant without reference to food. She suffered nearly constant nausea and frequent vomiting. There was an alternation between diarrhea and constipation.

She had typhoid at eleven years and rheumatism four years later. The digestive history was comprehended in her immediate illness. There was no further history of significance. Examination showed a large, rather obese, healthy appearing woman, well nourished and well developed. There was no abnormality of head, throat or chest. The abdomen was fat, tympanitic and somewhat tender under the right costal margin. There was no other abnormality except obesity and a tender right upper quadrant.

The urine was normal. Blood showed a moderate anemia, 11 per cent. eosinophiles, 48 per cent. lymphocytes, 41 per cent. polynuclears, and 12,000 white cells. Stools showed trichocephalus and schistosoma Mansonii ova.

Case 2. P. S., male, aged 36, native of Porto Rico, went to Hawaii 16 years ago, where he lived 15 years, coming to San Francisco one year ago. His illness consists of increasing weakness and

¹ Am. J. Trop. Dis. & Prev. Med., VIII, 1915, 250.

disinclination for work. His wife had been treated for hookworm in the clinic and hospital and thought her husband had the same trouble.

Except for having had malaria several times, the history is of no significance. Examination showed considerable pyorrhea and infected tonsils. The sclerae were icteric. Chest and abdomen were normal. There was some edema of the legs. All glands were palpable. The urine was normal. Blood showed a moderate anemia, an average of 8000 white cells, with 55 per cent. polynuclears, 40 per cent. lymphocytes and 5 per cent. eosinophiles. Stools showed ova of trichocephalus and schistosoma Mansonii, and larvae of strongyloides. While under observation, the patient developed typhoid fever, which ran a mild and normal course.

Case 3. A. A male Japanese, aged 32, one of a party of Japanese who embarked from New York for San Francisco via Panama. Several of the party developed typhoid and were admitted to the hospital for this disease. The patient ran a mild, light, typical typhoid course. His stools showed uncinaria, trichocephalus, and a mixture of Mansonian and Bilharzian schistosoma ova. Spleen and liver were somewhat enlarged, but the influence of typhoid infection may have accounted for both. His blood showed no anemia and but 3 per cent eosinophiles.

Case 4. A. A. Male Japanese in same party as case 3. Rectal schistosomiasis.

Case 5. An Englishman from South Africa, who showed symptoms and signs of vesical papillomata, due to Schistosomiasis Bilharzia.

In each of its forms schistosomiasis constitutes a serious social and economic danger where it is endemic. The results are closely comparable, whether in China and Japan, the West Indies or Africa. In all these regions the results are serious enough to constitute a major public health problem. The actual death rate is almost impossible to estimate because of factors introduced by the chronic and disabling character of the disease, which permit intercurrent and terminal affections to play so prominent a role. Its chief menace lies in its long and disabling course, interfering with health and strength, and thus directly contributing to social and economic deterioration. It is thus closely analogous to hookworm disease. This analogy extends also to the method of infection by skin penetration, and to the general means of spread. Hookworm disease is established throughout the endemic habitat of schistosomiasis, and the economic and social results of the two conditions are undoubtedly more or less intermingled. It follows, therefore, that those considerations which allow fairly definite estimation of the physical and mental loss from hookworm disease are applicable to schistosomiasis in direct proportion to the relative incidence of infection.

The prophylaxis and public health control of schistosomiasis is dependent on an understanding of the intermediate life cycle of the trematode. The ravages of Bilharzia disease in Africa, especially in British troops in the Boer war, led to an exhaustive study of the situation by an English Bilharzia Mission, headed by Colonel R. T. Leiper, of the London School of Tropical Medicine, in 1915. This investigation established definite knowledge of the life history of schistosoma.

The ova are cast off from the human or animal host, in the stools, and if received into water, pro-

ceed to the intermediate cycle of growth. Dogs and cats are the usual animal hosts. Tepid, quiet waters are most favorable. In a period varying from ten minutes to one hour after reaching water active free-swimming miracidia hatch from the eggs. These miracidia are not infective for man, and the human disease never arises from them. The miracidia infect certain varieties of fresh-water molluscs, which thus become the intermediate hosts. Of the African fresh-water snails, *Bulinus* and *Planorbis* are chiefly incriminated. According to Leiper (Brit. M. J., May 18, 1916), *Bulinus* affords harborage to the terminal spine type or Bilharzian schistosoma, and *Planorbis* to the lateral or Mansonian type. The ova of the Bilharzian worm are distinguished by the terminal spine, the Mansonian by the lateral spine, whereas the Japanese egg has no spine, but only a little thickening of the egg membrane. Other species of snails have been reported infected with schistosoma, and the list of possible intermediate hosts is probably still far from complete.

On entering the snail, the miracidium develops into a sporocyst, which in turn produces daughter cysts. These migrate to the digestive gland and rapidly enlarge until finally the entire bulk of the mollusc is filled with their ramifications. The infected snail can then be recognized with the naked eye. A change in color of the digestive gland, in *Planorbis* from black to ochre, also assists in the gross detection. In the sporocysts develop the cercarial forms of the schistosome, which finally escape by rupturing the sporocyst and are discharged from the mollusc periodically. As in all digenetic trematodes, the terminal stage of development in the intermediate host is the cercarial form. The free swimming cercariae are infective for man. These cercariae must be carefully differentiated from those of avian and other trematodes, which are not, so far as known, pathogenic for man.

There is a striking similarity between schistosoma cercariae and hookworm larvae in their manner of infecting the human host by penetration of the skin. Leiper found that the warmth of the living body attracted the cercariae, which easily and quickly passed through the skin of a living animal, whereas only a "slight degree of penetration" took place in a dead mouse immersed in infected water. When a live mouse was immersed in infected water, which originally was full of cercariae, only a few cercariae and a large number of detached tails were found after an interval of two hours. Infection by mouth is, of course, possible if cercariae are carried to the stomach with water or food. In the definitive host, the parasite develops slowly through several metamorphoses, sex differentiation appearing early. The route of the trematode from skin to portal system has not yet been clearly established.

To summarize, then, schistosoma ova are thrown off in human or animal fecal material, and under proper developmental conditions are received in muddy, shallow, tepid water. Here mobile miracidia are quickly hatched, which infect certain specific types of molluscs and in the mollusc de-

velop to the cercarial stage, which is infective for man and other mammals. The cercariae, as opportunity affords, penetrate the skin of the human host, and after a prolonged cycle of development, appear as sexually distinct trematodes in the radicals of the portal vein.

The prevention and eradication of the disease may advantageously be considered from two aspects: first, its eradication in endemic areas, and second, prevention of its introduction into non-infected districts. Eradication in endemic areas is complicated by the agricultural customs of the various tropical and Oriental lands of its occurrence. To illustrate, the paddy field system of cultivation in China and Japan, together with the use of night soil for fertilizer, constitutes one of the most serious sanitary problems of these countries, not alone for schistosomiasis, but also for hookworm and other parasitic and bacterial diseases, such as the typhoid group, cholera and the dysenteries. The paddy fields are well-nigh universal, which means that all tillable land is terraced into small level patches with surrounding dikes, and the water overflowing from one small field to the one below it. This affords an excellent and thorough distribution of infection present in the fertilizing material. The farmers work barefooted, often being knee deep in the mud and water. In the water lily and lotus fields they are almost immersed in the muddy water. The fields are heavily fertilized with human excrement, a system of conservation which, in modified form, will undoubtedly obtain eventually in the west. One of our great economic wastes is the non-utilization of this great source of plant food. Here, as in many other things, we can take example to our advantage from the lands of the east. In the paddy fields, then, is found an excellent culture bed for pathogenic parasites and a well-disposed system for their wide distribution.

Leiper found that schistosome cercariae die almost at once in a 1.1000 solution of sodium bisulphate. He advises that unfiltered water containing cercariae can be rendered safe for drinking and bathing by heating to 50 degrees C., by storing at least 48 hours, which exceeds the survival period of the cercariae, and by adding disinfecting agents, such as sodium bi-sulphate in 0.1 per cent. strength.

In the case of *Schistosoma Japonicum*, Katsurada has shown that the eggs will die, or hatch miracidia which will die, within ten days. Storage for this length of time would, therefore disinfect the material, and would not be objectionable to the Oriental farmer, who already knows that the fertilizer is enhanced in value by maturation and decomposition. It has constantly to be remembered that native customs and methods cannot be easily and often cannot be safely changed. This fact is the major sanitary problem of the tropics. Eradication of schistosomiasis in endemic areas is no small task, and the means to be used must be elaborated more or less independently in each district.

From our standpoint, however, the problem of prophylaxis resolves itself into preventing the creation of new endemic areas. In the United States

the cases, so far as known, have been sporadic and imported. As illustrated in those here reported, the chronic carriers of the infection are discharging ova in unlimited numbers through long periods of time. Provided an appropriate intermediate host is available, these ova will at once develop into the dangerous infecting cercarial forms. The problem, therefore, becomes the question whether, in the United States, are found molluscs capable of acting as intermediate hosts. This is a public health problem of some importance. If intermediate hosts are found in the United States, then every case of schistosomiasis should be rigorously quarantined and the stools disinfected, and all immigrants from endemic areas should be examined to detect carriers. Alien carriers ought to be excluded. If a proper survey of the molluscs of the United States shows no probable host for schistosoma, then the imported cases of the disease are harmless and may safely be disregarded. It is to be hoped that such a molluscan survey can soon be undertaken.

350 Post street.

VENEREAL DISEASE CONTROL IN CALIFORNIA*

H. G. IRVINE, M. D., Director, Bureau of Venereal Diseases.

ETHEL M. WATTERS, M. D., Sanitarian, Bureau of Venereal Diseases, California State Board of Health.

The Surgeon General's reports¹ show that as high as one-fourth of the total sickness in the Army has in the past been due to venereal disease. In an army made up for the most part of trained men, during times of peace when the incapacitation of a certain number of men mattered not so much, even this amount made these diseases one of the real problems of the Medical Corps.

In contrast to this, consider how the problem increases when, in the twelve-week period following the mobilization of our new Army,² venereal diseases were almost five times as prevalent as all other communicable diseases put together. The figures for the annual admission rate per thousand for this period were—for venereal diseases 121.9; for other communicable diseases 25.7. Under communicable diseases are included pneumonia, dysentery, typhoid, paratyphoid, malaria, meningitis and scarlet fever; measles is not included.

The point to be especially emphasized is that this rate occurred at a time when large numbers of new men were undergoing intensive training; when incapacitation was fatal not only to the training of the individual, but also it retarded decidedly the training of the group of which he was a part. In this same twelve-week period (2) previously referred to, there were reported from 31 cantonments 21,742 new cases of venereal disease. In a communication³ received by the

* Read before the Forty-seventh Annual Meeting of the Medical Society, State of California, Del Monte, 1918.

(1) Syllabus of an address to assist company commanders in the instructions of their men in the knowledge of venereal diseases. Issued by the Surgeon General. Page 2.

(2) Based on figures and reports from Surgeon General's office.

Bureau of Venereal Diseases about March 1, was the statement that since war had been declared against Germany, over 30,000 men in our Army had been on sick report because of venereal diseases; it was estimated that this resulted in a loss of more than five hundred thousand days of military training besides the cost of treatment. The figures obtained at the time of the mobilization of the National Army in September and October, 1917, should appeal above all others to civilians. Here the rate is based decidedly upon the incidence of these diseases in civil life. In the week ending September 28, 1917, the National Army records show the unprecedented rate of 388 per thousand per year. This should demonstrate the need, particularly at this time when the United States is contemplating an army of four or five million men, of suppression and control of venereal diseases in the civil communities.

In attempting the solution of the problem of venereal diseases, the complexity of which must be recognized, it will be impossible in the time allotted to this paper to deal in detail with all phases of the control of syphilis and gonorrhea. It may, however, be approached from four points:

1. CONTROL OF THE CARRIER.

Many physicians who are interested in venereal diseases have said they were concerned only in the medical phases of the subject; the moral and sociological sides not concerning them. In this way they have attempted to dodge the issues of prostitution and alcohol. In dealing with this problem from a public health standpoint, physicians must interest themselves in all sides of the problem. Prostitution is essentially a matter for the courts to deal with, but history has shown that until the civil authorities have been taught to recognize the relationship of prostitution to venereal disease, no adequate action is taken by them. It is therefore necessary to be concerned not only with the medical diagnosis and treatment of prostitutes, but by demonstrating to the civil authorities the amount of infection in these women to urge upon them adequate enforcement of the laws against the business in general.

In a paper read before the San Francisco Medical Society and published in the March issue of the California State Journal of Medicine, Sperry has gone into many of the details of the plan for control of this group of infected persons, so that at this time it is desirable to emphasize only the need of enforced quarantine. So far as prostitutes as a class are considered, when found diseased quarantine must be rigidly enforced, otherwise it will avail little to give them medical treatment, especially from the standpoint of gonorrhea. Attention must be called to the fact that unless adequate provision is made by the State to prevent these women from returning to their business, the medical efforts are wasted, inasmuch as they almost immediately become reinfected. It is necessary, therefore, that there be adequate facilities provided for the three classes of prostitutes; that is, for the feeble-minded—permanent care, for the confirmed offender—long commitment to reformatories, for the young girl—rehabilitation by social service agencies.

The commercial prostitute is a prolific spreader of disease because she nearly always has gonorrhea, perhaps chronic in nature, and if allowed to practice her profession openly she daily exposes from ten to twenty or more patrons. From the standpoint of syphilis she is not so important, as she contracts it early and thereafter may take sufficient treatment to keep the disease under control. Clandestine prostitutes are a danger, not so much on account of number of persons they individually expose, but because they are more numerous, and being youthful offenders, are more likely to be acutely infected and less informed as to the care of themselves and their patrons.

With commercialized prostitution the burden of blame rests on the woman, as she more frequently solicits the man; exception should be taken, however, to the pimp and the panderer who exploit her. With clandestine prostitution the man and woman alike should feel the weight of the law, and it is certain there would be fewer such exposures if the man could also expect a jail sentence or hospital quarantine for his syphilis or gonorrhea. The question of commercial prostitution is becoming of less consequence in our campaign, as there are now not many cities which tolerate open or licensed houses of prostitution. In this regard, Riggs³ of the Navy found that at the naval station at Norfolk, Va., when there were 80 commercialized houses of prostitution in that city, 85 per cent. of the infections were due to commercialized vice.

FACILITIES FOR FREE DIAGNOSIS AND TREATMENT.

There is a very large number of patients afflicted with venereal diseases who cannot afford to pay for adequate treatment. These patients are not treated at all, or they apply to the druggist and are supplied with nostrums, or they are insufficiently treated at the hands of private practitioners. Emphasis should be placed on the fact that a small amount of treatment with these cases does little good from a public health standpoint; this is of course more true with gonorrhea than syphilis, since it is infectious as long as it is present; whereas syphilis may possibly be rendered temporarily non-infectious. The great need is to place each patient in a condition so that he will not be a danger to others; this means, generally speaking, a cure. The man or woman, then, who can only afford to pay for a little treatment should be sent at once to a dispensary or hospital where they may receive sufficient treatment. This brings up the need for increased hospital and dispensary facilities. In many cities of forty or fifty thousand people there are no free dispensaries. It is to be hoped that this campaign against venereal disease will demonstrate the need not only of facilities for these diseases, but for others as well. When these dispensaries are formed, they should be standardized according to the regulations of the State Board of Health.⁴ There should be adequate social service facilities provided so that cases will be carefully followed up and not al-

(3) Venereal Prophylaxis in the Navy. Riggs, Chas. E. Journal Social Hygiene, July, 1917.

(4) See Special Bulletin No. 24 for venereal disease control. Published by the California State Board of Health.

lowed to neglect their treatment. Inasmuch as many physicians, especially in the smaller communities, have not the means at hand for laboratory diagnosis, this has been provided free by the State.⁵

3. CONTROL OF PRIVATE PATIENTS.

Adequate provision must be made for the control of private as well as indigent patients. This necessitates the passing of laws or of rules and regulations by the State Board of Health under which these patients can be required to take the necessary amount of treatment. There should be a system of notification, identifying in some way those persons venereally diseased, providing for the reporting of the name and address when under certain circumstances the patient permits himself or herself to become a danger to others. Health officers should be responsible for the control of these individuals when they are reported. The rules should also state the responsibility of parents and guardians for the compliance of minors. Many physicians believe that notification is bad, inasmuch as they think it will have a tendency to drive patients away from them and into the hands of druggists and quacks. The public in general and patients in particular should be informed carefully that these reports are absolutely confidential, and that so long as they continue treatment and conform to the necessary rules their names and addresses need not be divulged, and that even if that be done the health officer's record is also a private and confidential one. Rules should be passed preventing the counter-prescribing by druggists, or the sale of any preparation or nostrum to be used in the treatment of gonorrhea or syphilis. England's venereal disease act of 1917 embodies these principles. We also believe it will be possible by a campaign of education to practically put the quack out of business. The control of these cases depends entirely upon the hearty co-operation of the medical profession, both individually and collectively, and it is to be hoped particularly at this time when all of us are anxious or should be anxious to do everything possible by way of war service that physicians will pledge themselves to this co-operation.

4. EDUCATION.

The systematic education of both laity and physicians to the dangers of these diseases, to their prevalence and the needs of adequate treatment, is perhaps the most important of any single method of attack. This must include talks to girls and boys on sex hygiene by proper persons, talks to mothers and fathers, the distribution of literature and the placing of exhibits, the stimulation of provision of proper recreational facilities in communities now without any, and the greater use of those at hand. Proper education will do much to prevent the individual from becoming infected, to stop the recruiting of prostitutes and to bring under treatment those persons already infected. It is necessary to teach parents to supervise more carefully their children's conduct; it is necessary to obtain more women police and better juvenile detention homes; it is necessary to prevent sex

immorality and to insist upon the single standard of morals in order that the venereal diseases may be as readily prevented as other communicable diseases.

WHAT HAS BEEN ACCOMPLISHED IN CALIFORNIA.

With these four points of attack as a basis, what has been accomplished and is being done in this campaign? It should be understood that the Bureau of Venereal Diseases does not pretend to take credit for all that is being accomplished. Those things are stated which are the results of the campaign in which the Bureau has taken an active part.

Law enforcement is now being actively carried out in every large city of the State. This means that police departments are seeking evidence against places conducted as houses of prostitution, that prostitutes are being apprehended, that district attorneys are generally making use of the red-light abatement law, and that police judges are giving jail sentences to guilty offenders. In many small cities there were still segregated districts where houses of prostitution were allowed to run openly. During the past six months these places have been closed. In each instance our Bureau has attempted to see that all inmates were properly examined, quarantined and treated. That this has had a marked effect on reducing the problem is shown by the police court records of San Francisco, where, in the Women's Court in October, before the campaign started, nearly 400 women were charged with crimes of moral turpitude, whereas, in February, only 85 appeared in court. This in spite of the fact that not only an efficient morals squad is continually working, but many federal investigators as well. The reduction in the number of prophylactic treatments in the various military and naval stations through the State is suggestive of the decrease in number of exposures resulting from the suppression of the prostitute.

In connection with this work, San Diego has appropriated over \$25,000 for building, equipping and maintaining a special detention hospital. The medical work is done by a special staff organized under the Health Department; the hospital has thirty-two beds. Los Angeles has also equipped and is maintaining a special detention hospital. So far, about \$30,000 has been appropriated, and it is under the charge of a special staff of the local health department.

San Francisco set aside a special ward in the San Francisco Hospital for isolation of these court cases and organized a clinic at the jail for examinations. In Oakland, Sacramento, San Jose, Fresno, Bakersfield and many smaller communities arrangements have been made for examination and isolation of these patients in the county hospitals.

In San Diego, Los Angeles and San Francisco arrangements have also been made for the examination, diagnosis and treatment of all prisoners in the city and county jails. Nearly 20 per cent. have been found to have syphilis when Wassermann surveys were completed, and nearly 50 per cent. to have syphilis and gonorrhea.

All military and naval stations in the State re-

(5) Containers may be had by application to State Hygienic Laboratory, Berkeley, Cal.

port sources of infection to the State or local health authorities and a definite effort is made to apprehend and place the infecting individuals under treatment.

In England the expense of venereal disease clinics is lessened for the local communities by a subsidy from the Government to the extent of 75 per cent. of the cost of establishing local clinics. Such a plan as this has not been necessary in California. The Bureau is distributing free salvarsan for syphilitics, and this undoubtedly has resulted in getting more people treated. This, of course, is not in itself sufficient to insure the desired result, namely, the cure of every syphilitic. Up to April 1, 1760 doses have been distributed.

In San Francisco, in addition to the facilities for treating court cases, the five emergency hospitals have been opened for treatment of venereal disease cases.

In Los Angeles the County Hospital now admits all acute cases of syphilis and gonorrhea needing hospital care. A clinic has been organized in the County Jail, in which all prisoners are examined and treated. The dispensary already in operation as a men's night clinic has been given more rooms and equipment, and the service is now extended to women as well as men.

In Fresno the County Hospital is paying special attention to venereal disease patients; a social service department has been inaugurated which is in charge of follow-up work, and up to March 1 a total of 35 patients were being treated for syphilis. Fresno has enlarged its municipal clinic to include venereal diseases and has now a well-equipped department, with excellent laboratory facilities and a social service department. The dispensary is open two nights a week, as well as during the day.

In Bakersfield the supervisors have agreed to supply funds necessary to devote a ward of the County Hospital to venereal disease, and to supply the present County Physician with an assistant, who will take particular charge of this work.

Plans are under way for the opening of a municipal clinic in Stockton, Oakland and Riverside. Arrangements have also been completed whereby infectious cases can be treated under the direction of the local health officers, this particularly in small communities, salvarsan to be supplied by us on their requisition.

As an emergency, the Bureau has been able to offer the services of the State Board of Health laboratory to all army and navy posts for Wassermann tests. Many camps have taken advantage of this, as laboratory facilities in the camps have been insufficient. For several years California has had a law requiring reporting of venereal diseases, but only by initials or office number. In October these rules and regulations were amended to better cover the situation, and again at the March meeting amendments were made so that at the present time the rules and regulations conform generally to the standards suggested by the Surgeon General's office, and are being adopted by other States.

Briefly, notification is required by serial number furnished by the State Board of Health, said number to be made a part of the physician's record of

the case. If the patient lapses from treatment, the name and address are to be reported to the State Board of Health. Provision is made for the compliance of minors as well as for preventing druggists from prescribing for these cases.

Patients known to be in an infectious condition and so conducting themselves as to endanger others may be placed under quarantine. A further explanation of the rules and regulations will be made in a circular letter to be addressed shortly to all members of the profession which will be the inauguration of a definite campaign to enforce the law in this regard.

The Bureau has issued and distributed to physicians several thousand copies of a pamphlet on syphilis and its treatment. A pamphlet on syphilis and gonorrhea, with information and instruction to patients, has been issued and over 10,000 distributed. There is now a rule that every such patient shall be given one of these pamphlets. Members of the staff of the Bureau are frequently asked to address clubs or other groups of men or women, and this offers opportunity for considerable educational work. Plans are being made for definite courses of lectures in various parts of the State, and an exhibition is being planned which will tour the State. There will be an attendant, who will answer questions and give advice. A particular effort will be made to advertise in each place the local dispensaries. Literature will be distributed.

The Bureau has co-operated with the Commission on Training Camp Activities by arranging for physicians to give supplemental lectures in the army and navy camps. These men are officially accredited by the Commission and the Bureau pays their expenses. The lectures follow a standard syllabus issued by the Surgeon General's office and are illustrated by stereopticon slides. Up to date such lectures have been given at Camp Kearny, Camp Fremont, the naval training stations at San Diego, San Pedro, Mare Island and San Francisco. It is estimated that not less than 45,000 men have been reached by these lectures.

The Bureau has purchased and is lending a stereomograph to the Army. This is at present at Camp Kearny. It shows automatically a series of 52 slides illustrating much of the pathology of syphilis and gonorrhea, and giving considerable information in reading material. It has been in use for several weeks, and the entire command will have had opportunity to benefit by this instruction. The psychology of this method of presentation is excellent, and Colonel Murray, the Division Surgeon, has expressed himself as particularly pleased with it. Several thousand placards for use in comfort stations and latrines have been issued by the Bureau. These have been supplied to Camp Kearny, Camp Fremont, Army Aviation Camp at North Island, San Diego; Presidio, San Francisco; Fort Winfield Scott, Mare Island, Naval Training Stations at San Diego, San Pedro and San Francisco. They contain a few brief statements concerning syphilis and gonorrhea, a warning against quacks and fakers, and drug store treatment, and in the case of those supplied to civil communities directions as to where free treatment and advice can be had.

In conclusion, we desire again to emphasize the need of recognition of the complexity of the venereal disease problem. A determined and a continuous campaign must be waged against commercialized prostitution, as it passes from the segregated district and the open brothel to the hotel, rooming-house, automobile and roadhouse. And with all of these there is the street-walker. Energetic and willing civil officials can reduce both the volume and the intensity of this traffic to a minimum, and infections will decrease as the source is made inaccessible. Adequate facilities for diagnosis, treatment and control must be at hand for every class of patient. The knowledge of the prevalence, dangerousness and need of long-continued treatment must be spread broadcast. The role of liquor and idleness and the lack of clean recreational facilities should not be forgotten. The complete success of the work depends very much upon the closest co-operation of all concerned, and not upon the activity of any single group.

LABORATORY TECHNIQUE CARRIED OUT IN STUDIES OF LOBAR PNEUMONIA IN BASE HOSPITAL LABORATORY, CAMP LEWIS, WASH., WITH REPORT OF SUBSTITUTION OF RABBITS FOR WHITE MICE, IN DETERMINATION OF PNEUMOCOCCUS TYPES.

By CAPTAIN KENNETH J. STANIFORD, M. R. C.
(Fresno, Cal.), Chief of Laboratory Service,
Base Hospital, Camp Lewis, Wash.

Pneumococcus Type Determination is being carried out in this laboratory, both by agglutination and precipitin reactions. Experience has shown that of the two procedures, the precipitin reaction offers numerous advantages over the other, and is of such delicacy as to justify its routine use alone, in type determination, in the event that mice or rabbits are not readily obtainable.

It has been found in this laboratory that rabbits can be very satisfactorily substituted for white mice for agglutination tests, these animals having been used here for several months with excellent result. Half-grown rabbits are most suitable. The use of food animals is an objection to which we have given due consideration, but the importance of the work in question seemed to us to be sufficient justification for their employment at a time when white mice were not obtainable.

It is the intention to use precipitin tests as routine in the future, and to make use of rabbits only when it is thought there is special indication for more exhaustive study.

In order to expedite the laboratory work which is of diagnostic, prognostic and therapeutic value in relation to the respiratory infections, the following procedure has been instituted by the laboratory:

All laboratory examinations of specimens from cases of pneumonia—particularly lobar pneumonia—including sputum, urine, blood (cultures and counts) and pleural effusions have been made by a "Pneumonia Unit" of workers rather than in various departments of the laboratory, which would

necessitate getting the different reports together later, and offering the probability of confusion. In the present "unit," the work is centralized and the workers are consequently familiar with the various phases of the case in point. This provides a standardized routine, which functionates as follows:

- A. The laboratory is notified immediately upon admission to a ward of a case with a tentative or absolute diagnosis of lobar pneumonia.
- B. One of the unit workers at once provides a sterile petri-dish and gives proper attention to the securing of a satisfactory specimen of sputum.
- C. Another unit worker makes, immediately, a complete blood count and takes blood for a blood culture.
- D. Instructions are left with the ward-master to send a specimen of urine to laboratory at earliest possible moment. (Special containers are provided for this purpose, and it has been so arranged that the laboratory office clerk, upon receipt of such container with urine, delivers it directly to the unit, and not to the routine urine department.)

The above routine has resulted in many advantages. Frequently, several hours' time are saved in submitting a report to the ward surgeon than would otherwise be the case. In some cases several days' time are saved, as the early practice of routine blood culture, complete blood count and urine study make it possible for the ward surgeon to have the first complete picture presented by the laboratory usually not later than the first day following the admission of the patient. With this routine in operation, the type determination of the pneumococcus can be frequently reported upon the same day that the patient is admitted. Early treatment with specific serum in certain instances can be instituted accordingly. As for the benefits to the laboratory service, we have found that our work has been greatly simplified through this standardization. Furthermore, in the event of a serious number of pneumonia cases arising in this cantonment, the situation could be much more promptly and efficiently met.

This report has dealt specifically with acute lobar pneumonia. In the studies made, streptococcal infection of the lung, with subsequent pleural involvement (purulent effusion accompanying) and also involvement of the pericardium (at times, also with purulent effusion) was frequently noted, blood cultures frequently showing streptococci.

The unit work is carried out in other respiratory infections as well as in the case of lobar pneumonia.

Standardized technique being observed in pneumococcus type determinations in this laboratory are as follows:

TECHNIQUE FOR PNEUMOCOCCUS TYPE DETERMINATION.

Procedure: Collection of Sputum:

This is one of the most important steps in the preparatory technique. Due importance will only be given this proper collection of sputum, after

one has had numerous sad experiences in obtaining results which are valueless. The sputum must be of bronchial origin and as free as possible to obtain from contamination acquired in the upper respiratory passages, if reliable results are to be had. The "mouth-types" of organism encountered in working with sputum which is from the upper passages or which has become contaminated from such source, will give rise to much confusion and annoyance and necessitate doing the work over again.

Upon receipt of the sputum (in sterile petri-dishes) in the laboratory, it is examined grossly for any excessive amount of salivary secretion, and if such is present, the specimen is discarded and another is requested. If the material is apparently of proper origin, two direct smears are made.

Preliminary Examination of Smears.—One of these smears is examined by Grams Method in the usual manner, and the other by a slight modification of Hiss Capsule Staining Method.

Stain—Saturated alcoholic solution of Fuchsin (or Gentian Violet), 1 part.

Distilled water, 19 parts.

Method of Staining.—After thorough air-drying (do not fix by heating in flame) the smear is treated with the stain and heated to steaming—not boiling—for 20 to 30 seconds. The stain is then washed off with 20 per cent. copper sulphate solution and the slide dried by blotting—no water being used. In our work, this method of capsule staining has proven more consistently satisfactory than the other methods which are in common use.

Selection and Washing of Sputum.—About 1 c.c. of carefully selected sputum is drawn into a large sterile pipette from the Petri dish and is introduced into a test tube containing about 5 c.c. of sterile normal salt solution. The sputum is carefully washed by means of the pipette and by agitation. The sputum is transferred from one to another of from five to seven tubes of salt solution, the same treatment being carried out in each of the tubes.

Macération of Sputum.—The washed sputum is now thoroughly ground up in a sterile mortar with a small quantity of white sand (which has been sterilized). The mortar and pestle are prepared by cleansing with boiling hot water, then by rinsing with alcohol, and finally by igniting the alcohol.

While the sputum is being ground, 2 c.c. of plain bouillon are added drop by drop, until a complete emulsion is obtained. About one-half of this emulsion is used for rabbit inoculation and the remainder is used for inoculating the special culture media or "artificial mouse" for precipitin tests.

Rabbit Inoculation.—In general, the technique is similar to that used for white mice.

Procedure: One-half of the above-mentioned emulsified sputum is injected intra-peritoneally into a rabbit, preferably a half-grown animal, the usual precautions of this technique naturally being observed.

In case of virulent types of pneumococci, the

rabbit usually dies within 18 hours; if the animal does not die within this length of time, it is killed and an incision about half an inch in length is made in the abdominal wall. With platinum loop, material is obtained from peritoneal cavity for inoculation of special culture media to be described, and for smears which are stained by the Gram Method and the Hiss Capsule Stain.

If little or no fluid is noticed in the peritoneal cavity or on the surface of the viscera, about 20 c.c. of sterile normal salt solution are used in washing out the cavity. This is pipetted off into a sterile test tube, and centrifuged at low speed for one minute, and the supernatant fluid decanted into another centrifuge tube. This, in turn, is centrifuged, but at high speed, and until clear. A Precipitin Test is run directly on the clear supernatant fluid. Treatment with bile is unnecessary, as organisms have been removed by centrifugalization. The sediment remaining when the fluid has been decanted from the tube is diluted with normal salt solution, drop by drop, until a slightly opaque emulsion is obtained.

An Agglutination Test is then made with this opaque emulsion as follows:

Four tubes are set up in rack and series. These tubes are of the small type commonly used in the Wassermann Test.

Into each of the four tubes 0.5 c.c. of the opaque emulsion is pipetted.

Thoroughly shake each tube. Incubate at 37.5 C for from one-half to one hour, after which time it should be possible to make readings, which are made in the usual manner.

Readings of Agglutination Reactions with types of Pneumococci are, as a rule, more pronounced than with the Precipitin Reactions, although the latter are frequently more sensitive.

In using both the Rabbit Method and the Artificial Mouse Method of type determination of Pneumococcus, we have found all tests to coincide. In other words, the Precipitin test on sputum inoculated media, on the supernatant fluid from rabbit peritoneal washings, and the agglutination test on the sediment from the peritoneal washings have all given the same result.

(The pericardium of the rabbit is opened, and heart blood taken from the right auricle. A smear of this blood is stained by the described Hiss method and a tube of the special culture media to be described is inoculated. The latter procedures are for the purpose of control and further studies of the organism.)

SPECIAL CULTURE MEDIA METHOD (for Pneumococcus Grouping) AFTER AVERY.

Of the emulsified sputum, one-half was used for rabbit inoculation.

The remaining half is used to inoculate special culture media, preparatory to the carrying out of Precipitin Tests for Pneumococcus grouping as follows:

This emulsion, about 1.5 c.c., is pipetted into a tube containing 4 c.c. of 1 per cent. Glucose Meat Infusion Bouillon—reaction from plus 0.3 to plus 0.5 to phenolphthalein—to which 0.3 c.c. of defibrinated human blood has been added.

The inoculated tube is then incubated at 37.5° C for from five to seven hours, after which time two smears are made and stained by the Gram and Hiss methods as mentioned before. (The Hiss stain is used in making studies of the presence of Pneumococci frequently recovered from various cultures, contrary to the usual teaching that they are to be demonstrated in cultured organisms only in occasional instances.)

If, after incubation, the red cells have not all settled to the bottom of the tube, the tube is centrifuged at low speed for two minutes, and the supernatant emulsion is transferred to a sterile centrifuge tube. To this emulsion is added one-fifth its volume of sterile ox-bile, and the tube is placed in the water bath at 37.5° C for twenty minutes for bile digestion and for observation of degree of bile-solubility.

The emulsion is then centrifuged at high speed to throw down any bile-insoluble organisms or foreign substances which may be present. A smear is made from the sediment thus obtained and is stained by Gram method. If any organisms are demonstrated in this smear, a Glucose-Serum-Agar slant or Blood Agar Plate is inoculated, as control study. After centrifuging at high speed until clear, this supernatant fluid is treated as follows:

Four sterile Wassermann tubes are set up in series and into each is pipetted 0.5 c.c. of the bile treated supernatant fluid.

Absence of Precipitin Reaction in all four tubes

Add:—To Tube No. 1, 0.5 c.c. Anti-Pneumococcus Serum, Type 1 (diluted 1:20)	
To Tube No. 2, 0.5 c.c. Anti-Pneumococcus Serum, Group 2 (Undiluted)	
To Tube No. 3, 0.5 c.c. Anti-Pneumococcus Serum, Group 2 (diluted 1:20)	
To Tube No. 4, 0.5 c.c. Anti-Pneumococcus Serum, Type 3 (diluted 1:5)	
Add:—To Tube No. 1, 0.5 c.c. Anti-Pneumococcus Serum, Type 1 (diluted 1:10)	
To Tube No. 2, 0.5 c.c. Anti-Pneumococcus Serum, Group 2 (Undiluted)	
To Tube No. 3, 0.5 c.c. Anti-Pneumococcus Serum, Group 2 (diluted 1:10)	
To Tube No. 4, 0.5 c.c. Anti-Pneumococcus Serum, Type 3 (diluted 1:5)	

The Precipitin reaction is usually immediate, but if no reaction is noted, the tubes should be placed in the incubator for 30 minutes.

Readings:—		
Precipitation in Tube No. 1 indicates	Type	1 Pneumococcus
Precipitation in Tube No. 2 and 3	Group	2 Pneumococcus
Precipitation in Tube No. 2 and not in No. 3	Sub-group	2 Pneumococcus (a, b, x)
Precipitation in Tube No. 4 indicates	Type	3 Pneumococcus

indicates Group 4 Pneumococcus, or absence of Pneumococci in culture. REMARK: In our work on Type Determination, we have had a number of cases (of lung infection due to the Streptococci, which were clinically cases of lobar pneumonia) in which we obtained Streptococci when the Precipitin Reaction Reading was Group 4 or negative. These were cases in which the direct smears from the sputum showed organisms, morphologically Pneumococci and Streptococci. Smears examined from the inoculated and incubated media of these same cases showed the Streptococci predominating. These observations, in some cases, were subsequently borne out by examination of pleural exudate and blood culture. They were also consistent with clinical and autopsy findings.

The special culture media referred to is essentially the Avery Media. The only modifications

are that human blood is used in place of rabbit blood, and the blood is not added to the bouillon base until ready for inoculation with the sputum emulsion. The blood is drawn into sterile flasks containing beads and defibrinated by this method, and is kept in these flasks until ready for use when 0.3 c.c. is added to each tube of the bouillon base to be used. The flasks of blood are carefully watched for evidences of Hemolysis or contamination, and the Glucose Meat Infusion bouillon is incubated both with and without blood, in control tubes, to insure sterility.

In the use of the Artificial Mouse, it is advisable to inoculate two tubes instead of one, for checking results and for protecting against accident in technique.

Complete blood count, blood culture, and precipitin test on urine are made in each case where type determination is requested on sputum. Pleural exudate is likewise examined, a Precipitin Test, a culture and smear being made in each case.

CONCLUSIONS.

1. A unit within the laboratory is of the greatest service in carrying out whatever laboratory examinations are required in a case of pneumonia, in addition to the special study of the sputum. The work is thereby centralized in the laboratory and is more comprehensive in its final result. Other departments of the laboratory are

- relieved of work which would be, if referred to them, simply "routine work."
2. This technique insures early diagnosis of pneumonia as to types and of complications (as may be determined by finding of streptococcus in blood culture).
3. Rabbits are satisfactory substitutes for white mice in pneumococcus grouping.
4. Precipitin reaction offers a dependable means of determining types or groups of pneumococci, when white mice or rabbits are not available.
5. Pneumococcus type determinations should be carried out in every case of pneumonia, and every laboratory should be prepared to carry out the necessary technique, and that without delay.

6. The precipitin reaction makes possible a much earlier determination of pneumococcus type than with agglutination reactions when it is necessary to await infection of the animal. It is possible to report type determination by the precipitin method within six hours of the delivery of the specimen of sputum to the laboratory, under suitable conditions.

I wish to take this opportunity of acknowledging the credit due Lieutenant Frank E. Smith, who has had immediate supervision of laboratory studies of the respiratory infections in this hospital during the past few months. I wish also to express my deep appreciation to the other officers and to the corps men whose enthusiastic co-operation and untiring efforts have made possible the organization and standardization of this department of the laboratory.

CEREBRAL OEDEMA IN INTRACRANIAL TRAUMA.*

By ANDREW STEWART LOBINGIER, A. B., M. D.,
F. A. C. S., Los Angeles, California.

A steadily increasing number of injuries of the brain seen in this country, due to motor car collision, lends an especial interest to this subject. The war is contributing a mass of important data, as yet crudely classified, but material from which eventually intelligent conclusions may be drawn.

The importance of oedema in injuries to the brain has received a tardy recognition. This has been due partly to the overshadowing significance hitherto attached to hemorrhage; it has been largely attributable to the misinterpretation of intracranial tension and its vital relation to the centers of representation in the medulla.

Oedema in greater or less degree is dependent on the severity of the injury sustained. It is doubtful, however, if it ever fails to develop, except in the very mildest type of concussion. In severe concussion, in contusion, with or without fracture, as well as in depressed fracture, the resulting oedema, revealing its presence by changed intracranial tension, is the expression of a pathologic physiology in the brain which should receive our serious attention.

Because we know the certainty of its occurrence and the very stubborn and slowly yielding character of the disappearance of oedema, more definite effort should be directed against its development.

As early as 1886 Sir Victor Horsley demonstrated clinically that oedematous changes in the fundus could be relieved by trephining the skull, and at the International Congress in Berlin in 1890 he showed that the papilloedema associated with brain tumor was an evidence of intracranial tension which could be relieved by a decompressive operation on the skull and dura.

Beginning with the injection experiments of Manz in 1870 down to and including the researches of Cushing and Bordley in 1890, the mechanical element in the genesis of cerebral oedema

has claimed a wide acceptance. The controversy over the identity of optic neuritis and papilloedema as waged between Deutschmann and Elschnig, and the constant and definite factors in the causation of intracranial and optic oedema as determined by the researches of Saenger, Von Hippel, and Thorner, and in this country by Cushing, are now chiefly historic.

An observation of singular clinical significance made by Horsley as early as 1884 and confirmed in 1886, and in a report on the surgical treatment of brain tumors published by him in 1895, showed that ipsilaterality of the lesion and oedema of the fundus was constant in about 75% of all his cases in Queen's Square. The value of this observation in localization is apparent. The anatomic boundaries of the falx and tentorium he believed to fully account for the physiologic expression of papilloedema on the side of the tension lesion.†

But he went farther. In his argument for the ipsilaterality of the lesion and papilloedema he very carefully mapped out the areas of the disc which were progressively invaded and the histologic changes in the nerve head. He demonstrated with photographic precision that the first invasion of the disc was a dilatation of the retinal veins on the upper nasal side which passes gradually downward and across to the temporal side. Following this is the blurring of the oedema which takes the same course and where the intracranial tension persists, becomes diffuse over the disc, developing a true papilloedema. The histogenesis was worked out with equally elaborate detail and his contribution to the changes in the fundus in intracranial tension, given at Belfast in 1909, remains the most brilliant classic in the literature of this subject.

The direct result of these critical studies has been to draw our attention more closely to the significance of trauma in the production of oedema. If, as Horsley found, the macrocytes and connective tissue corpuscles lying beneath the Mullerian fibres of the papilla, compose the pathologic histology of papilloedema, it is obvious we should find in the cytotic changes in the dendrons of the brain proper, analogous phenomena as a result of trauma. It is quite apparent we must look farther than the changes in the vascular mechanism of the brain for an explanation of oedema. The papilloedema which Manz was able to produce by the injection of a neutral fluid, and Cushing and Bordley by the swelling tension of a sponge tent, will not, in the light of our present knowledge of intracranial tension, explain the generally diffused pressure.

Trotter who classifies post traumatic oedema under "reactionary swelling" believes that "injury of the brain leads to oedema and swelling which in turn leads to pressure on the veins and venous obstruction. When this condition progresses below the tentorium into the vital centers the gravest effects are produced. In concussion of the brain the irritative symptoms coming on several hours after injury are due to this reactionary oedema."¹

In 1916 Sargeant and Holmes made a study of 1239 patients in the London Hospitals suffering

* Read before the Forty-seventh Annual Meeting of the Medical Society of the State of California, Del Monte, April, 1918.

† British Medical Journal, March 5, 1910.

¹ Wilfred Trotter, British Journal of Surgery, 1915, II, 520.

from injuries to the brain sustained in battle. Their observation on postoperative disability is of singular interest. They found that while "the degree of disability was to a degree dependent upon the severity of the trauma, most of the paralyses, and sensory and visual disturbances noted in the earlier stages were due not so much to the result of destruction of brain tissue as to concussion, oedema, and vascular disturbances that extend beyond the site of primary injury."²

We have repeatedly seen in traumatic cases of delayed intervention, a generally disseminated opacity of the arachnoid and that significant obliteration of the cerebral sulci which gives to the cortex a blurred, flattened, diffuse appearance. It is a pathologic index which may be seen in its full development only in the living subject; six hours' post mortem it will rarely be seen. The delicate structure of the brain cells and the neuroglia distinguish them as highly susceptible to the hygroscopic changes which result in cloudy swelling. The trauma which can produce these changes need not be more than concussion. We have records of many cases where there was no evidence discoverable by our present methods of examination which disclosed fracture or contusion, and in which the measure of intracranial tension developed was quite equal to that of the severer lesions. This pathologic index may be transitory or it may be a progressively developing tension which will end in a lethal oedema of the medulla. The degree of trauma, as we may estimate or measure it, it must be remembered is not an infallible index to the intracranial tension. How may we determine this? There are now certain dependable evidences which will guide us: A patient sustaining an injury to the cranium sent in with a pulse of 120 or over and with evidences of shock may be taken as the usual type. During the first few hours an effort should be made to keep the patient perfectly quiet, with ice cap to the head, warm bottles in the bed, and warm salt solution and coffee by enema. Opiates should be avoided if possible. As soon as possible we should determine the blood pressure and the condition of the optic disc. Every effort should be made in this examination to disturb the patient as little as possible. If the vascular balance becomes established, the blood pressure will rise and as it does so the pulse will slow down. If the pulse falls below 60 in the adult or 80 in the child, the fundus should be observed under a transitory mydriatic every few hours. The constancy of the increasing disparity between the blood pressure and the pulse rate will be accurately reflected in an increasing oedema of the disc, the unerring evidence of introcranial tension. Confirmation of this tension will be determined by lumbar puncture and measurement by the manometer. When the index rises above 10 mm it is a plus tension. Usually in lumbar puncture we have a rose tinge to the cerebro-spinal fluid when hemorrhage results from the cranial injury. This however is not absolutely constant, and in fractures of the frontal vault the fluid taken by lumbar puncture may be clear.

When 20 cc of cerebro-spinal fluid is withdrawn there is a drop in introcranial tension, as the manometer will show. But as long as the lesion remains unrelieved, the effusion and oedema will be persistent and the index in the fundus remain but slightly changed.

A linear fracture, which does not become compound by communicating with external cavities, such as the ear, pharynx, or nasal sinuses, is more or less of a negligible factor in cerebral trauma. The contusion to the brain structure and the punctate hemorrhages and oedema which result from this traumatism are the overshadowing factors in determining our course of action; so that except in compound, comminuted and depressed fractures, and massive hemorrhages which call for immediate intervention, a deliberate analysis of the evidence of oedema in intracranial pressure is of paramount importance. There is abundant reason to believe that the presence of a clot as well as spicula of bone in depressed fracture are productive of an intracranial tension extending far beyond the radius of their respective pressures. That this tension is due to a widely disseminated oedema, which, as Manz and Cushing proved, was always the concomitant of a localized pressure and irritation, there seems not a reasonable doubt. We must, therefore, conclude that intracranial tension, accompanied or not by massive, superficial or sub-tentorial hemorrhages, may be the physiologic expression of a traumatic oedema; that its occurrence is probably constant and that its clinical significance is vastly greater than that of hemorrhage itself, which very frequently is localized and from which cerebral oedema may be a definite consequence.

The treatment of cerebral oedema will always consist in the safe and definite relief of introcranial tension. The indications for surgical intervention must be determined by the evidences of progressive tension, the physiology of which is quite well understood. Operation should never be done when the pulse is increasing in frequency. It should be done before the oedema has extended below the tentorium and seriously depressed the centers of representation in the medulla. The selection of the proper time to operate is as vital as the choice of the operative measure for relief. The time has gone by when we can condone a delay which will result in blindness from a hopeless papilloedema or a lethal result from oedema in the floor of the fourth ventricle. The surgeon competent to do brain surgery should be permitted to elect the time and if possible choose the environment in which operation shall be done. The surgeon has a right to stress this point with emphasis. There can be no question that an unnecessary mortality in the past has come from operating either too soon while the patient was still in shock, or too late, when a general oedema had overwhelmed the centers in the medulla.

The value of withdrawal of cerebro-spinal fluid by lumbar puncture will depend somewhat upon the location and extent of the traumatism. There is always the danger of withdrawing an excessive amount and having the medulla collapse into the

² P. Sargeant and G. Holmes, Jour. Royal Army Corps 1916, xxxvii, Sept.

foramen magnum. Twenty cc should not be exceeded at one sitting, and unless the pulse, blood pressure and fundus show early improvement from lumbar puncture, it should be abandoned. We are of the opinion that lumbar puncture as a measure to relieve intracranial tension has a very circumscribed field for its application, and because of its dangers and doubtful efficiency it should be employed only by one whose judgment, experience and skill are unquestioned. A safer measure where plus tension is very high would be venesection, and this also should be restricted in its application.

Cranial decompression, first suggested by Horsley and later perfected by Cushing, offers the most dependable relief in acute oedema of the brain. It is not an ideal procedure and leaves much to be desired in the exposure to trauma and adhesions at the site of operation. But it is distinctly a life-saving measure, and when done with the care and skill which should characterize every operation on the brain, its lasting benefits far outweigh its possible complications.

We should remember that no patient is certain to be quite a hundred per cent efficient who has suffered a serious brain injury. A subtemporal decompression done at the proper time for oedema may save a patient's life; it may restore him as a useful member of society, but it rarely returns to the patient more than 75 or 80 per cent. of his former mental and nervous competency. Many of these patients remain irritable and emotional through the balance of life; we have done very much for them if we are fortunate enough to diagnose the lesion and operate for its relief early enough to save life and vision.

SARCOMA OF THE CHOROID WITH REPORT OF TWO CASES.

BENJ. F. CHURCH, M. D., Redlands, Cal.

My object in reporting these two cases of sarcoma of the choroid is to call attention to the clinical findings in the presence of orbital neoplasms and the differential diagnosis between these conditions, during their early stages, simple detachment of the retina and acute glaucoma.

All agree that sarcoma of the choroid is a grave affection and that the only chance for the patient's life lies in an early diagnosis and enucleation of the eye. In simple detachment of the retina the clinical course is about as follows: The detachment occurs rather rapidly. Upon ophthalmoscopic examination we find a clear vitreous with a sacculated spot in the retina, vision reduced out of proportion to the local condition found and, in the early stage, usually grows progressively worse. During the early period of detachment of the retina, which accompanies sarcoma of the choroid, the clinical symptoms are identically the same as found in simple detachment.¹ This similarity is not long maintained. Pressure symptoms invariably occur, at indefinite periods, after a detachment due to ocular growths, but does not take place in simple or primary detachment.

According to Fuchs,² tumors of the choroid are divided into four stages. In the first stage the tumor is small and manifests itself only in ophthalmoscopic examination by detachment of the retina at site of the growth. The detachment and corresponding blindness slowly or rapidly progresses. The eye at this time, externally, is normal to all appearances. The second stage is ushered in by an increase of tension and general appearance of inflammatory glaucoma. Marked injection of the eyeball, severe pain and clouded cornea is present. Later on, the lens becomes clouded and we have a picture of glaucoma absolutum. As this condition corresponds completely to the complex symptoms of inflammatory glaucoma, a correct diagnosis at this time is very difficult or impossible to make. The third stage is that of the tumor breaking through the tunics of the eye. The fourth stage is that of generalization of the tumor by development of metastatic nodules in the internal organs, most frequently in the liver.

Fortunately, in a few cases, in the earlier stages, we can recognize through the retinal vessels of the choroid or of the tumor and also the yellow or brown color of the latter. In this case the diagnosis of sarcoma of the choroid is easily made. Later, however, on account of the disturbance in the circulation of the choroid, produced by the growth, an accumulation of fluid takes place between the choroid and the retina, which precludes a view of these vessels through the retina. In this stage the tension of the eye affords a very important diagnostic point.

In simple serous detachment of the retina tension is reduced early in the disease, while in detachment due to a tumor it is at first normal and afterward increased. Sarcoma of the choroid is a rare disease. It is found most frequently between the fortieth and sixtieth years. Simple detachment of the retina is somewhat common.

Especially would I lay stress upon a positive diagnosis before the performance of posterior sclerotomy, advocated by some, for the removal of the fluid in simple detachment. Pressure symptoms being thus removed or prevented may delay the discovery of the true cause of the detachment.

REPORT OF CASES.

Case 1—Mrs. S., age 38, weight about 160 lbs. Apparently in perfect health. Had never suffered any serious illness. Family history negative. Seen at office March 5, 1914. Complained of failing vision in the left eye for the past five or six months. Central vision nil. Objects distinguishable in field. Vision in right eye normal.

Ophthalmoscopic examination revealed a typical picture of simple detachment of the retina. Patient placed in the hospital and given sub-conjunctival saline injections, pilocarpine and laxatives. Patient left hospital in two weeks, vision at this time being slightly worse than when she entered, and returned to her home in an adjoining town. No perceptible change in the fundus at this time except an extension of the detachment. On June the 11th, nearly three months later, she returned

¹ Thompson and Curtin, Section on Ophthalmology 1915.

² Text Book of Ophthalmology.

complaining of severe pains in the eye, which exhibited all the symptoms of acute glaucoma. The symptoms, accompanied by severe pain, were much worse upon the following day and continued until the third day, after the onset of the pain, when the eye was enucleated. Section of the eye revealed a small pedunculated tumor about six m. m. in circumference, which was attached to the choroid five or six m. m. from the optic disk. This proved to be a melano-sarcoma.

Examination of the fundus after the onset of pressure symptoms was unsatisfactory on account of cloudiness of the cornea and media of the eye, yet thought I could distinguish, through the retina, vessels of a growth. My principal reliance for the diagnosis was in the glaucomatous symptoms. In a few days after the eye was enucleated, as a safeguard against metastases, the patient was given Coley's fluid hypodermatically daily for one week. The initial dose being one-fourth of a minim and gradually increased to two and three-fourths minims to the dose at the end of the week. The patient now, four years later, is comfortably wearing an artificial eye and has no evidence of an extension of the disease.

Case 2—Mrs. P., age 40, a farmer's wife. Robust health. Came to me on May 5, 1912, for refraction of her left eye, stating that she had lost the sight of her right eye several months before. Examination revealed a large detachment of the retina which was recorded as such and no treatment instituted. More than one year later I was called to her home and found her suffering great pain. Eye hyperaemic with high tension. Unable to see the fundus on account of cloudiness of vitreous. A diagnosis of acute glaucoma was made. Patient being unwilling to go to the hospital for operative treatment, vigorous use of hot stupes, eserine and dionine relieved the pain and hyperaemia in due time, though the cloudiness and some tension remained, when I saw her last, two or three weeks later.

Nothing more was heard from the patient until September of last year, which was four years after I had seen her with the glaucomatous symptoms. She then complained of pain in the blind eye. The globe was hyperaemic, sensitive to touch with some increase of tension. Well up under the upper lid there was a black sacculated protrusion of the sclera. I advised immediate enucleation. This, she refused until one month later. Firm adhesions to thickened tissues of the upper part of the orbit were found. The globe was smoothly enucleated without attempt to remove the adjacent tissue. Complete healing took place in due time and an artificial eye was introduced which the patient has comfortably worn for six months. The larger part of the globe was filled with a black tumorous mass which proved to be melano-sarcoma.

Up to this time no evidence of local or metastatic extension of the disease has occurred. This sad ending will, in all probability, take place sooner or later. In the first case, as the eye was removed very soon after the growth started, and four years having elapsed, we may reasonably hope for no further trouble. Of this, however, we

are not certain as recurrence of this character of growth has occurred after the lapse of seven years.³

THE PASSAGE OF DRUGS FROM BLOOD SERUM TO THE SPINAL FLUID.*

By HENRY G. MEHRTENS, M. D., San Francisco.†

In the treatment of diseases of the meninges it is obviously of the greatest importance to be able to cause drugs, and other substances, to pass from the blood stream into the spinal fluid. While the meninges are intact these attempts have met with very small success, except with hexamethylenamin and occasionally with uranin. The possibility of arsenic being able to penetrate seems very doubtful. Sicard and Block, Benedick and others have found traces in the spinal fluid following the intravenous injection of salvarsan, others including the author have been uniformly unsuccessful. This discrepancy may be accounted for by the varying state of meningeal irritation of the syphilitic patients, who furnishes the material for most of these studies.

As early as 1902 Leri as well as Orefici and Cruchet noted the presence of iodide in the spinal fluid of patients suffering with tubercular meningitis who had previously received iodide by mouth. Rotky also was able to detect bromide in the spinal fluid of a patient suffering with meningitis who had received bromide by mouth for a considerable time. None of these authors were able to find either iodide or bromide in the spinal fluid of normal patients. From these observations it would seem that inflammatory disease of the meninges causes a "let down" of the barrier separating blood from spinal fluid, whether at the choroid or elsewhere. Attempts have also been made to reproduce this state by the introduction of irritating substances into the subarachnoid space, such as cyanide of mercury, horse serum and homologous serum. Simple drainage of the spinal fluid following salvarsan, was advocated in America by Pillsbury. Barbat found arsenic in the spinal fluid following a thorough drainage of sub-dural space. In a series of 30 cases treated at Lane Hospital the results of this method (salvarsan following drainage) were definitely inferior to those of the Swift Ellis treatment judged by both subjective symptoms and ability to produce a permanently normal spinal fluid.

All of these observations were more thoroughly explained by the work of Flexner and Amos in their work on poliomyelitis. They showed that anti-bodies and even the virus of the disease might be drawn from the blood serum to the spinal fluid following the introduction of certain irritants into the subarachnoid space. Especially significant was their finding that these irritants might be graded in the order of their potency. Horse serum was found most potent, then heterologous, homologous serum, hypo-tonic and hyper-tonic saline solutions, and least irritating of all was drainage of the cerebrospinal fluid.

It is interesting to consider how these newer

³ Fox, Practical Treatise of Ophthalmology.

* Read before the Forty-seventh Annual Meeting of the Medical Society of the State of California, Del Monte, April, 1918.

† From the Neurological Clinic of Stanford Univ. Med. School.

ideas in spinal pathology have been utilized in our treatments of diseases of the meninges. The intradural methods of Swift Ellis, Ogilvie and Byrnes all tend to place the emphasis upon injecting arsenic or mercury more or less diluted in serum, into the spinal canal. They depend upon diffusion or the circulation of the spinal fluid to bring the injected substance in contact with the pathological lesion. Practically these methods have produced undoubted clinical results, but it well may be that their success may depend on factors other than those given out by their author.

The introduction of the patient's own serum into the subarachnoid space produces an irritation manifested by a pleocytosis frequently as high as 1800 cells per cu. mm. Even drainage of 30 to 50 cc. of spinal fluid may be followed by a mild reaction of 10 to 80 cells. Following the ideas of Flexner and Amos, it seemed possible that this irritation of the choroid would enable drugs and anti-bodies to pass into the spinal fluid for a period of 36 hours.

In order to secure exact information on this point, we attempted to bring sodium iodid from blood to spinal fluid. This drug was chosen for two reasons, first, because it had been definitely proven by numerous observers including Catton that sodium iodid will not penetrate the normal choroid; secondly, because it can be maintained in the blood in considerable concentration with little distress to the patient.

Our technique in brief consisted in injecting 50 grains of sodium iodid in a 10% solution (according to the formula of Klemperer) intravenously every half hour for four injections. One hour after the last injection, 12 cc. of spinal fluid was removed, a cystological examination was made and the fluid was examined for iodine by Mr. C. G. MacArthur of the Pharmacological Department of Stanford University. In these 10 control cases no iodid was found.

In the next group of cases (8) the same routine was followed except that 10 cc. of horse serum was injected into the subarachnoid space six hours before the intravenous injections of iodid. The resulting spinal fluids in six cases showed intense irritation in some cases up to 16,000 cells per cu. mm.—in two cases practically no reaction was obtained. Those cases showing the intense reaction gave definite tests for iodine in the spinal fluid. The two cases showing little or no reaction gave negative tests for iodine.

These results would seem to point to the irritation of the meninges as the essential feature in producing the permeability for iodid.

In another series of cases which will be reported in a subsequent communication, we are attempting to make a quantitative estimation of the arsenic reaching the spinal fluid from the injection of salvarsan where a preliminary injection of horse serum has been given.

These results while of interest from the standpoint of the particular drugs studied are of more importance when viewed in relation to the general methods of intradural medication. If, by these experiments, it seems evident that by an injection

of horse serum the night before, sodium iodid may be made to pass from blood to spinal fluid, why should we not use this simple and direct method in our attack on the spirochete located in the meninges? In other words, if horse serum, or preferably the patient's own serum, were given the night before, time allowed for an aseptic reaction to develop, then salvarsan given intravenously, we could obtain the advantage offered by the introduction of the immune bodies present in the patient's own serum and at the same time secure free communication for the penetration of the drug.

We are now treating a series of cases in this fashion in the Neurological Clinic, Stanford University Medical School. It differs from the Swift-Ellis treatment only in reversing the order of the technique—i. e., giving the spinal injection of the patient's own serum, first, with or without the addition of mercury, and following this six hours later by an intravenous injection of salvarsan. While the results seem very encouraging, the series is still too small for an accurate comparison of the merits of this with the older intradural methods.

Discussion.

H. D'Arcy Power: In listening to the papers that have been given and the discussion thereon, I am impressed with the fact that the physiology of these experiments has not been very fully considered. Speaking to one of the writers I gathered from his remarks that in some way or other it was expected that if fluid be withdrawn from the spinal canal a negative pressure would be induced that would cause the absorption of material from the surrounding lymph, by what might be termed a process of mechanical filtration—that is to say, that the meninges would act as a permeable membrane permitting the passage of material like a solution passes through filter paper. It seems to be overlooked that this is not the nature of living tissues, on the contrary these surfaces are covered by an intact physiological membrane made up of separate cells every one of whom is only semi-permeable and not permeable to matter in solution. There is therefore, wherever such surface is intact, a biological selective power which determines whether or not a given salt shall or shall not pass through the membrane. We might very well understand the results obtained by accepting this view, that where fluid does pass in consequence of a disturbance of the intra-meningeal condition such as by the taking out of a large quantity of fluid, or by the introduction of horse serum, or arsenic, that some of the cells lining the meninges, very delicate as they are, suffer such injuries that they undergo necrobiosis, and in every point where a cell so dies, the membrane becomes permeable by removing it from the biological into the physical category. It is only when we properly study the physiology of the passage of solutions through the tissues of the cord that we can expect to make experiments which will have scientific results.

References.

- Leri: Arch. Med. des enfants, 449, 1902.
- Oreffel: Ref. ins. Jahrbuch f. Kinderheil kunde, Bd. 1422, 1902.
- Cruchet Compt. rend. de la Soc. de Biol., Bd. 54, 1422, 1902.
- Rotky: Ztscher. f. Klin. Med., 1912, v. 75, 474.
- Barbat: A. M. A., v. 70, p. 147, 1918.
- Benedict: Quoted by Sachs, Amer. J. Med. Sci., v. 148, p. 698, 1914.
- Flexner & Amos: Jour. Exper. Med., 527, April 1917.
- Gal. Med. de Caracas, vol. 23, p. 185.

EFFECT OF PNEUMATIC HAMMERS ON HEALTH.

In accordance with its plan of eliminating as far as possible preventable diseases among workers in various industries, the United States Public Health Service of the Treasury Department has begun an investigation of the effect on the health of workers of pneumatic hammers as used in cutting limestone.

It has been learned that inconvenience is felt by workers in this industry in using the air hammers in soft stone because of a temporary numbness of the fingers whenever the hand becomes chilled. No serious consequences resulted from this disorder but it appeared well to find the reason of the condition and to see if it could not be remedied.

The most important cause was found to be the higher vibration rate of the hammers when used in soft stone, and the second cause the tight and strained grasp which the workers had to use. Cold weather brought out the symptoms, but was not in itself a cause of the condition.

By using a shank of larger diameter, which would permit a more comfortable grasp by the worker, it is believed that a good deal of the strain on the muscles would be relieved. If the shank were enlarged by using a tight-fitting covering of asbestos or some similar substance, the cold would not be intensified as at present by the metal, and the handle would act as a shock absorber.

Book Reviews

A Practical Text-Book of Infection, Immunity and Specific Therapy with special reference to immunologic technic. By John A. Kolmer, M. D., Dr. P. H., M. Sc., Assistant Professor of Experimental Pathology, University of Pennsylvania, with an introduction by Allen J. Smith, M. D., Professor of Pathology, University of Pennsylvania. Second Edition Thoroughly Revised. Octavo of 978 pages with 147 original illustrations, 46 in colors. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, \$7.00 net; Half Morocco, \$8.50.

In the second edition of Kolmer's book all the newer tests used in a modern immunological laboratory of the hospital or clinic and at the bedside are again minutely described in simple and lucid style. The treatise is of interest not only to the student or laboratory specialist, but it should also be consulted by the practitioner, because Kolmer makes easily accessible the main principles and the proper interpretation underlying the numerous tests on which he relies in his prognosis and in his therapeutic measures.

Among the many additions and alterations, particular attention has been paid to the Schick test for immunity in diphtheria, active immunization in diphtheria with toxin-antitoxin mixtures; complement fixation in tuberculosis and other bacterial infections, the standardization of a quantitative Wassermann reaction; tests to be used before transfusion for iso-haemo-agglutinins and iso-hemolysins and the Lange's colloidal gold test.

In the chapter on treatment of various infections, the importance of the nonspecific "shock" therapy is discussed, and the use of serum of convalescents and normal persons in acute poliomyelitis is fully considered. The field of chemotherapy is well covered, and the section on bacterial chemotherapy is a noteworthy summary in the light of our recent knowledge of antiseptics in the treatment of war wounds.

In the chapter on anaphylaxis, one misses the recent studies of Novv and DeKruif on anaphylatoxin, and again the discussion on allergic skin reactions gives the reader the impression that cutaneous hypersensitiveness is a function of anaphylaxis. Recent as well as old experiments have clearly shown that conditions which will sensitize an animal do not necessarily sensitize its skin. To bring

about cutaneous hypersensitiveness, a focus of infection has to be produced. On the other hand, Kolmer clearly states that a positive skin test is evidence of infection or sensitization to a particular protein, probably without having any direct relation to resistance to infection or re-infection.

Aside from a few mis-spelled names of authors, the text is free from mistakes.

K. F. M.

Thyroid and Thymus. By André Crotti, M. D., F.A.C.S., LL.D. Published by Lea and Febiger, 1918. Price, \$10.00.

This monograph, representing seventeen years' work, is undoubtedly the most complete and best treatise on the thyroid and thymus that we have in the English language. The author has been trained along both pathological and surgical lines—that his training has been good is manifested by the character of his work. As a pupil of Kocher, he inclines largely towards his views regarding the classification, pathology and treatment of goiter, yet he is thoroughly familiar with the extensive literature on this subject. He has very systematically considered the anatomy, physiology, pathology, symptoms, and medical and surgical treatment of the various diseases of the thyroid gland and, to a lesser extent, the thymus. In harmony with the views of McCarrison, who has recently published a book on thyroid diseases, he considers Graves' disease a form of toxic thyroiditis. He has, however, overlooked what seems to the reviewer a very important contribution to the study of hyperthyroidism. We refer to Goetsch's work on toxic adenomata of the thyroid—that the adenomata are more often responsible for the toxic symptoms, than are the remnants of thyroid tissue. This point has also been brought out in some of the publications of the Mayo Clinic. When, for instance, in a case of marked hyperthyroidism, without the symptoms of exophthalmos, we find a goiter consisting almost entirely of adenomata, with only a thin covering of fibrous thyroid tissue, it seems illogical to consider minute areas of hyperplasia in the thyroid as the cause of the symptoms. We are inclined to think that Wilson, who originated the theory, must have abandoned it.

The book is exceptionally well illustrated by original illustrations, many of them being in color. It is very readable throughout and though over 500 pages in length, there is no padding, nor any attempt to magnify the ego. It certainly ranks high among the monographs and will remain authoritative for a considerable number of years.

W. I. T.

A Text-Book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicines and Clinical Medicine, Medico-Chirurgical College Graduate School, University of Pennsylvania. Thirteenth edition thoroughly revised with the assistance of John H. Musser, Jr., M.D., Associate in Medicine, University of Pennsylvania. Octavo of 1259 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, \$6.00 net; Half Morocco, \$7.50 net.

Perhaps no better single volume on the practice of medicine can be had than this standard work which has been admirably brought up to date by the addition of such matter as the following: Treatment of tetanus, acidosis in diabetes, chylothorax, etiology of aortic incompetency, treatment of asthma, diverticulitis, functional tests of hepatic insufficiency, Gaucher's disease, estimation of renal function, anaphylaxis of food intoxication, pneumococcal infections, focal sepsis, ratbite fever, febrile wolynica and pyorrhea alveolaris. Also, a number of old subjects have been re-written, particularly the chapter on the nervous system by Dr. Chas. Potts. Too much can hardly be said in praise of this excellent work.

H. F. A.

Practical Dietary Computer. By Amy E. Pope, New York: Putnam, 1917. Price \$1.25.

This volume contains 156 pages of closely packed tables on the following subjects: (1) food requirements, kind and quantity with reference to age, weight and sex; (2) carbohydrate, fat, protein, purin, calcium and iron content of certain food substances; (3) composition and caloric value of common foods and beverages; (4) diabetic foods; (5) carbohydrate equivalents; (6) recipes.

The book is of distinct value to the specialist, the general practitioner and the nurse. The information that it contains is so arranged as to be readily available in practical every-day work.

W. K.

Hand-Book of Operative Surgery. By Wm. I. Wheeler, 364 pages. Third edition, New York: Wood, 1918. Price, \$3.50.

An introductory note by Sir Alfred Keogh says: "The work itself is intended for junior practitioners in surgery, and assuredly there never was a time when guidance for the young surgeon was more needed."

The book was quite evidently originally written as a guide to a course in operative surgery on the cadaver. The classical academic operations, ligation of vessels and amputations are fully explained; other procedures, laminectomy, and operations on the heart and lungs, for instance, are not discussed at all. Over two-thirds of the work are given over to operations on the extremities. It describes mainly well-established procedures; some of its teachings, however, will scarcely meet with wide approval,—the use of chisel and mallet in osteoplastic trephining, the implantation of silver sheets to close defects of the skull, etc. The explanations are lucid and practical and the illustrations are good. The commoner operations of military surgery are so well described that it may be especially commended to younger medical officers who may be called upon to face surgical responsibilities with which they have had no previous experience.

L. E.

The Third Great Plague, a Discussion of Syphilis for Everyday People. By John H. Stokes, A. B., M. D., Chief of the Section of Dermatology and Syphilology, The Mayo Clinic, Rochester, Minnesota. 12mo of 204 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, \$1.50 net.

The leading thought of this work is that, in spite of all advances by medical science, in regard to syphilis people at large are still ignorant. The author urges the use of plain English when discussing syphilis, and we heartily agree with him when he says that "it is a direct move in favor of vulgar thinking to misname anything which involves the intimacies of life." We only hope that Stokes' plea to think of syphilis as a medical and sanitary problem only, and to separate, at least temporarily, the question from our thought about morals and allied questions will be considered.

Two statements, however, must be taken cum grano salis, the one (p. 78) that salvarsan "stirs the germs up before it kills them" and the other (p. 79) that 24 hours after a salvarsan injection "scarcely a living germ remains."

The author's recommendations for the systematic treatment and saving of a certain class of hereditary syphilitic children are very timely, and his sane views on the question of compulsory reporting will be endorsed by every thinking and fair-minded physician.

The work is well written and holds the interest; it is mostly intended for the educated lay reader, but should be widely read by physicians; even the experienced syphilologist, while finding no new facts, may learn how to talk to his patients, and mainly how to influence the large number of the "I don't care" class amongst them. V. G. V.

Treatise on Regional Surgery. By Various Authors. Edited by John Bairbairn Binnie. 3 volumes. Philadelphia: Blakiston, 1917. Price, \$7.00 per volume.

It is easy to foretell a long life and many editions for this work. Binnie says in the preface that each collaborator has been urged to record personal opinions, rather than to state what others think. It is remarkable how uniformly the various writers have succeeded. Some may have even gone too far in considering their own personal hobbies and achievements. Many of them have interjected numerous case histories. To give space to such particular details is unwarranted in a book which aims to be—and is—a succinct exposition of essentials. A "case" is rarely of interest to others than the author.

Space prohibits the detailed review this work should receive. With few exceptions the articles are so good that it is easier to pick small single flaws than to give to them all just praise. The sections on genito-urinary surgery and neurological surgery are especially good. They give most useful information in borderline subjects, conservative and medical treatment, diagnosis, etc. Sir Robert Jones and others have completed an admirable orthopedic section. Only the chapter on surgery of the brain is wanting. Binnie says that he has omitted it for lack of a proper collaborator. It is a pity that this one chapter should be missing. It is to be hoped that the gap may be filled in later editions. It would be of advantage to set a short bibliography at the end of each chapter as Mayo has done in the chapter on the rectum, rather than scatter the references through the body of the reading matter.

The book gives just what is needed. It really fills a long-felt want. There has been nothing in English comparable to Wullstein-Wilms' text. Binnie and a list of men like Mayo, Sir Robert Jones, Bloodgood (and including Stillman and Rixford of San Francisco) have given us a work that will long remain the companion and guide of students and practitioners. It is far and away the best there is in the English language. It should forerun similar collaborative texts of internal medicine, gynecology, pathology, etc.

L. E.

The Medical Clinics of North America. Volume 1, Number 4 (The Boston number, January 1918). Octavo of 401 pages, 128 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Published bi-monthly. Price per year: Paper, \$10.00; Cloth, \$14.00. Contents:

Henry A. Christian: Complete heart-block. Partial heart-block with Stokes-Adams syndrome. Chronic myocarditis. E. P. Joslin: Severe diabetes. J. L. Morse: Empyema in children. W. P. Graves: Ovarian organotherapy. E. A. Locke: Osteitis deformans with sarcoma of humerus. C. J. White: Premature loss of hair. F. B. Talbot: Eczema in childhood. H. A. Barnes: Vincent's angina. A. W. George, R. D. Leonard, F. W. O'Brien: Roentgen diagnosis of disease of upper right abdominal quadrant. J. B. Hawes: Early diagnosis chronic ulcer stomach and duodenum. K. H. Thoma: Relation of teeth and jaws to general medicine. G. R. Minot: Pathologic hemorrhage. A. W. Sellards: Amebic dysentery and associated conditions. J. B. Ayer: Focal transverse lesions of spinal cord. R. M. Smith: Pyelitis of infancy. I. C. Walker: Cause and treatment bronchial asthma. G. W. Holmes: X-ray examination of heart and great vessels.

History of Medicine. Suggestions for study and Bibliographic Data, by Fielding H. Garrison, A. B., M. D., Principal Assistant Librarian, Surgeon General's Office, Washington, D. C. Second edition revised and enlarged. Octavo of 905 pages with many portraits. W. B. Saunders

Company, Philadelphia and London, 1917. Cloth, \$6.50 net; Half Morocco, \$8.00 net.

The second edition of this work is eagerly welcomed. The first appearance of the book filled a long-felt want. With the new edition, re-written and enlarged, we turn to the pages of an old friend for inspiration and encouragement. The excellent appendix makes the work of selection easy. Altogether, it is a book for every doctor, and a fitting gift for a colleague when you wish to express appreciation of some little kindness.

M. I. J.

Elements of Pediatrics for Medical Students. By Roland G. Freeman. 289 pages. New York: Macmillan. 1917. Price, \$2.00.

This is a small handbook of facts, every one of which a medical student should know. It takes up in a concise manner the anatomy and development of the baby, and enters into the care and hygiene of the infant. The chapter on nursery hygiene is particularly good. The subject of infant feeding is rather indefinite, as is usual in all textbooks. However, there is much sound sense in these few pages that briefly describe the different aids to diagnosis and the various methods of treatment. If well versed in the contents of this book, the student could not go far astray. It is especially recommended to the beginner.

F. M. H.

Correspondence

FROM DR. SHERMAN.

The New Willard,
Washington, D. C.,
May 4th, 1918.

To the Editor:

The Medical Section of the Council of National Defense called a meeting of its State Committees for the fourth of May here in Washington, and in response men came from every State in the Union. I have heard the members present estimated at over two hundred and fifty.

It has been my fortune to have been to a number of meetings in Washington, usually Congresses of Physicians and Surgeons, or meetings of the American College of Surgeons, and this meeting has resembled those in the personnel; I have met here much the same group of men as on former occasions. But there the similarity stops. There is in this gathering a tense earnestness and definiteness never found in others. There have been no scientific sessions, and no papers, of course; all meetings have been business meetings, and the business has been distinctly business, and more than that, it has been military business. Once in a while some member, yielding to an irresistible impulse, will get up and begin to tell what he thinks, or give information about how things should be done, and then no time is lost in telling him what the law says or what the orders are, and that the matter is settled. The meeting really is one for the information and instruction of the attendants, and but little is left for them to discuss, though a few matters have been settled by vote.

The purpose, of course, is to secure new men for the Medical Reserve Corps of the army. As I crossed the continent I read of the discussions in the Senate on increasing the army to 5,000,000 men, and since then we have been practically assured that the President will be empowered to call for as many men as he feels are needed, with no limit other than that. It is plain that a limitless army means a relatively limitless num-

ber of surgeons. That is where the Senate's action affects the medical profession.

Now, I had not forgotten—and the matter has been recalled here in the meetings—that the medical profession in the old committees, national and state, called the Committees of American Physicians for Medical Preparedness, was the first to begin to prepare back in 1913; and in the Surgeon General's office are still lists of medical men, made up at that time in the different states, California included, of medical men and their special trainings or specialties, so that he might have them at hand in the case of a need. This forwardness of the medical profession must not be forgotten by us, for it set us a mark up to which we must live now. To meet the demand for medical men which the increased size of the army will make, every medical man who has the moral, mental and physical qualifications and the proper training to enter the army must do so, unless he is absolutely indispensable to the civil population as practitioner, sanitarian, hospital attendant or teacher, and no man must think to settle the question of this indispensability himself. Do not imagine for a minute that this means coercion or a draft. The former would not coerce, and the latter the Surgeon General has forbidden. It means that every man must, in some way, get the same viewpoint and feeling that those of us who came here have gotten. That was easy for us to get. The facts of the matter were cold facts which were told us by the officials of the Medical Section, the psychologic value of the facts was given us by Martin, Simpson, Braisted and Keen, and by Senator Owen and Senator Sutherland. I do not know how I can possibly bring this home to you as I want to. I should despair of it if I did not know that the first wave of response had formed before I left home, when men like McCleave and von Adelung and Howitt and Van Dalsam and Jordan and Alderson and Miller, and Watkins have been making plans to offer themselves for commissions and that some of these have made the offer. The example of these men and the reasons which have affected them—and the additional facts and reasons which will present themselves almost daily—will make others see their duty in the same way, and there is no doubt but that they will act in the same way.

Now California is asked to offer for commissions in the Medical Officers' Reserve Corps two hundred men by the first of July. We must get together and see about that. By the time this letter is printed we shall be at it. Every man, to help us, must consider himself a voluntary member of the committees and come, and, if he is of the suitable age and has the qualifications, he should offer himself. That will be the kind of patriotism for an American—a citizen of the United States. Let no one fail in it.

HARRY M. SHERMAN.

State Society

NOTICES.

At the meetings of the Council of the Medical Society of the State of California, held at Del Monte, the following resolutions were adopted:

First—That all members shall be exempt from the payment of dues to the State Society during the time they are in active service and absent from professional work. The Secretary was instructed to ascertain from the A. M. A. what provision had been made for its members.

Second—It was resolved that a war tax of \$2.00 per capita, instead of \$1.00 (as recommended by the House of Delegates at the second session), be levied on all the members of the Medical Society not in military service, in order to meet the deficit occasioned by military enrollment. This tax will

be collected from the State Secretary's office towards the end of the fiscal year.

Third—A resolution was unanimously adopted that the assessment to join the Indemnity Defense Fund be continued at \$30.00 up to December, 1918, providing that this action may be hereafter modified by the Council.

Fourth—It was also resolved that the Councilor districts be left at 9, as they stand at present, and that six (6) Councilors be elected at large with the understanding that two (2) be apportioned to Los Angeles County.

Fifth—It was resolved that the annual meeting for 1919 be held at the Hotel Potter, Santa Barbara, California.

Owing to the volume of the report of the 1918 meeting at Del Monte, and the many subjects contained therein, it will not be ready for publication until the July issue of the Journal.

At the One Hundred and First Meeting of the Council of the Medical Society of the State of California, held at Hotel Del Monte, Monday evening, April 15, 1918, at 8:30 o'clock, on motion of Parkinson, seconded by Yates, it was unanimously

Resolved, That a notice appear in the next issue of the Journal calling the attention of members who desire their special lines of practice included in the Roster, to send the desired information to the State Secretary before the 10th of June.

The Roster of the members of the State Society is in preparation now. Therefore, it is imperative that physicians who wish to have their lines of special practice designated should send the information to the State office at once in writing.

AMERICAN WOMEN DOCTORS IN FOREIGN MEDICAL SERVICE.

Forty-three women physicians have been sent into foreign medical service by the American Red Cross, according to the Medical Advisory Committee to the Red Cross War Council. These women have not been sent as a unit, but as individuals. They are not only serving in France but in other countries in which the Red Cross is giving medical relief. Among those listed are the following from California: Jennie H. Anderson, Eureka; Emma Bucklev, San Francisco; Margaret Farwell, Los Angeles; Clelia D. Mosher, Palo Alto; Gladys Patric, Los Angeles; Eva C. Reid, San Francisco; Clara Williams, Berkeley; Helen Woodroffe, Pasadena.

County Societies

ALAMEDA COUNTY.

The regular April meeting of the Alameda County Medical Association was omitted as usual owing to the fact that the California State Medical Society meets at the same time.

The Council of the Alameda County Medical Association has decided to omit the bi-monthly meetings until next October.

On recommendation of the Alameda County Institutions Commission, Dr. J. B. Fish, formerly of the San Francisco County Hospital, was appointed on April 29, 1918, interne surgeon at the Alameda County Hospital, vice Dr. P. Morton Manson resigned.

Dr. Robert T. Legge, of the University of California, has recently been appointed Director of First Aid, Bureau of Military Relief, American Red Cross of the Pacific Division.

Under the direction of the Oakland City Health Department, a drive on the habitat of the mosquito is being planned—all low lands and stagnant pools

in creeks among the hills will be sprayed with crude oil.

In response to the call of the American Red Cross and the Government for trained nurses, Mills College has included in its curriculum a course preliminary to the training course for nurses. This course will fit the student to take any responsible position where superior education, administrative ability, supervision of welfare work, instruction of nurses or care and sanitation by institutions is demanded.

That the crime of parricide committed by thirteen-year-old Alfred Herbert Nelson might have been averted had the boy been subjected to psychological tests earlier in life, resulting in his school course being "scientifically directed and physical or nervous defects corrected," is the conclusion reached by Dr. Jau Don Ball, neurologist and psychologist, in his preliminary report to Probation Officer C. A. Wood.

Dr. Ball said, in part: "Oakland is in the lead in many respects and it can justly be stated that the medical psychological departments of the public schools in Oakland are doing wonderful work. The psychological department bids fair to be second to none in the country. I could not permit this opportunity to pass without expressing to you personally, my views not only on this case, but on the subject of child delinquency in general. When we examine the inmates of the State's prisons, we are dealing with end results. When we examine our juvenile delinquents we are only half way up stream. Let us go to the source, and with all the aid at our command, attempt to recognize the traits characteristic not only of the potential delinquent, but also of the future psycho-neurotic, and with our best aids, direct the individual course, so that instead of becoming a burden he will become a useful social being."

Dr. Minora E. Kibbe presented her resignation as visiting physician at the County Hospital—the doctor will be a candidate for the State Legislature and time will not permit her to continue her county duties.

Dr. Clara Williams of Berkeley is in France, as is Dr. Elsie Reed Mitchell. Dr. Williams is working under the Rockefeller Commission on Tuberculosis for the Red Cross for Civilian Relief among refugees in devastated areas. Dr. Mitchell also is working under the Red Cross among the same people.

On April 19th, the Samuel Merritt Hospital graduated thirty-nine nurses—the largest class in its history. Dr. W. S. Porter presided—Judge W. H. Donahue giving the graduating address, Dr. H. N. Rowell presenting the diplomas and Rev. W. K. Towner delivering the invocation.

The fourteenth commencement exercises of the Oakland College of Medicine and Surgery were held April 20th, Dr. Lemuel Adams, president of the faculty, presented the diplomas. The address was given by Dr. O. D. Hamlin.

Of the thirty-nine cities for which typhoid fever statistics for the year of 1917 have been compiled, the best showing is made by Oakland, with a total of only four deaths, or 1.9 in every 100,000 of population, according to figures received by Commissioner F. F. Jackson of the Public Health and Safety Department. New Orleans has the highest rate, 23.1.

Oakland heads the "honor roll" of cities having rates below five per 100,000. The statistics were compiled in Denver. Other western cities show as follows: Los Angeles, 4.7; San Francisco, 4.9; Portland, 5.2; Salt Lake City, 18.7.

On recommendation of the Civil Service Board of the city of Oakland, the City Council authorized the employment of an additional municipal nurse to be assigned for duty to the Anti-Tuberculosis Society.

LOS ANGELES COUNTY.**Our Honor Roll.**

(Continued, as per Dr. Nannie C. Dunsmoor.)

Dr. Elliot Alden, Dr. F. J. Barnett, Dr. Wallace Bodge, Dr. F. A. Bonthius, Dr. Fred Bowen, Dr. O. W. Butler, Dr. W. F. Collins, Dr. Ray Cowan, Dr. Karl L. Dieterle, Dr. Margaret Farwell, Dr. W. V. C. Francis, Dr. Alfred C. Germann, Dr. James S. Hall, Dr. James F. Holleran, Dr. C. E. Ide, Dr. D. P. V. K. Johnson, Dr. J. J. A. Van Kaathoven, Dr. R. K. Macklen, Dr. S. J. Mattison, Dr. Jacob E. Owen, Dr. Gladys Patrick, Dr. J. Ross Reed, Dr. W. H. Robert, Dr. C. G. Stivers, Dr. J. C. Wilson, Dr. C. S. Young.

April Fourth Meeting of the Los Angeles County Medical Association.

Thursday evening on the fourth floor of the Hamburger Building, at 7:30, a number of doctors' wives started patriotic community singing under the leadership of a competent director, in honor of our military visitors. Madame M. Thorner, wife of Dr. M. Thorner, sang an inspiring solo.

At 8:15, Dr. Wm. Duffield, president, called the meeting to order. The secretary announced the forthcoming address by Major Henry D. Jump, with a mission from Washington calling for needed professional men, medical, dental and nurses.

Dr. Duffield requested Dr. Wm. A. Edwards, chairman of the program committee, to preside. Mr. Gurley Newlin, president of the Los Angeles Chapter of the Red Cross, spoke on the Third Liberty Loan, saying: "You know your duty and have nobly performed it."

As Major John R. McDill was in service, Major Robert Smart spoke on "The Transformation of a Civilian Doctor into a Military Medical Officer."

Major Smart, who was sent up from Camp Kearny, said that during this short time at war 20,000 doctors have been commissioned, 17,000 are serving. Eighty-five per cent had hardly any conception of their duty, most thought it the same as in hospitals. Prior to the war, the man might have been a Jack-of-all-trades, but in the Army Medical Reserve Corps, he is assigned to the work to which he is best suited. He should be adaptable to any kind of work.

If all are equally well qualified, there are four things that military doctors must know: 1st, a practical knowledge of camp sanitation; 2d, control of men; 3rd, military discipline; 4th, drill.

Sanitation. This differs from that of civil life, for in the army the individual case is superseded by the mass. Prevention is aimed at. The doctor is the medical advisor of the commanding officer in everything, as the physical welfare of the troops and treating diseases. In camp men are grouped together and contagious diseases spread more quickly. Camps lack modern conveniences. Men get wet and cold and fatigued. Military sanitation can be enforced by quarantine. There is no trouble when men have good water supply, sewage, etc., but in camp latrines, caring for garbage by incinerators, is a difficult task. Put 250 recruits in tents, feed them, you cannot keep away disease. The number of diseases transmitted by water, food, and flies shows how important latrines, etc., are in camp life. The civil practitioner never gives them a thought. Should an infectious disease break out, it must be isolated, separated and quarantined. You must stop it getting into camp. In civil life, you notify the health office. The troop is quarantined until infection has passed. Prophylaxis against smallpox and inoculation against typhoid. Pneumonia and spinal meningitis you treat as in civil life. You never have the same problems in camp. The latrines, fill up with straw, oil is poured on and burned, but they fill up the quicker. Use lampblack and crude oil, flies do not like it; it is the best disinfectant.

The ability to command men. Men in the Medical Reserve Corps, surgeons, internists, laboratory men, may have to be something else. They may

have the administration of hospitals, command men at first line dressing hospitals, etc. You must control men in small or large numbers. Refuse, and gain a friend; there should be no semblance of tyranny; treat every one impartially.

Military discipline means to get immediate and unquestioning obedience to an order. It is harder to keep discipline in the American army because the men are brought up on an equality without inferiors and superiors. Rank-salutes and courtesies to superiors are not snobbishness. If men do not observe this discipline, will they carry out orders in the trenches?

Military drill teaches discipline. There are 135,000 hospital corps men. Our soldiers are said to have good brains and action, but discipline and uniform are poor. To drill men is more fun than work. You get up at five in the morning and you will like it. Army regulation is the law by which the army is run. You may be put in care of a base hospital or ambulance. You must know where and how to get the knives and forks, etc.

General Wood said 5,000,000 men in the field are required. Twenty thousand doctors, 17,000 in service. There are 2,000,000 men at present, 3,000,000 more will be needed soon, and from 20 to 30,000 more doctors. Los Angeles will not fail. If you cannot do the thing you are now doing, you must do what you are asked to do.

"Military Aspects of Typhoid Fever," by Major M. A. Ravenal.

Typhoid from the army standpoint is principally its control, which is a brilliant achievement. Military surgeons treat masses rather than individuals. Whatever branch concerned, the object is to get the greatest number of men in the fighting line in the least time. If men have to be quarantined it means much loss. During the Spanish war out of 107,000 men there were 27,000 cases of typhoid, of which 650 died in centers of civilization as in Jacksonville, Fla., and San Antonio, Tex. In that war every camp became infected in seven weeks. Seventy-five per cent. of typhoid epidemic was due to drinking water. Milk has caused big epidemics. The hypochlorite purification of water is simple.

Danger of infection from contact. Typhoid fever carriers infect a larger number of men in the army because of closer contact. Some have been typhoid fever carriers for four years who never had typhoid. Men dying of consumption had typhoid germs in the kidneys. On the ship Acme, Martin Olsen used the common drinking cup for distilled water thus infecting many. Mary, a cook on Long Island, excreted the germs with the feces infecting many. An epidemic broke out in the Roosevelt Hospital among the help for whom she was cooking. Fifty-six cases were due to her of which four or five died. One hundred and sixty cases were traced to one carrier. At Camp Kearny, because of anti-typhoid vaccination, there is no typhoid carrier or ambulatory case. Frequently protracted diarrhea is often found to be typhoid. In these cases the germs have no power to infect the blood of the carrier. The method of Pasteur of cultivating the virulency of the typhoid germ by passing it from man to man shows how virulent epidemics arise. Flies are carriers. Latrines must be protected from flies by lime. Flies carry the infection from camp to camp. At Camp Kearny there are about 6000 horses. The manure remaining soft, is a fine medium for the typhoid germ's growth. The stage of infectivity is when Peyer's patches break down and there is diarrhea. In the second week of inoculation infectivity is only a little less, but double that of convalescence. Paratyphoid was most prevalent at the Texas border.

Anti-typhoid vaccine should be used for both a and b Paratyphoid. Triple vaccine should be used as there is danger of anaphylaxis if repeated at intervals. Those forty-five years old are exempt from vaccination unless they are to go to the front. Typhoid is now non-existent in the army

due to anti-typhoid vaccination. It is a triumph of preventive medicine.

Dr. Duffield said that the profession has fallen short on the Liberty Loan. There should be organized effort on the part of the city and county in not only buying but also in encouraging the purchase by others. There should be a society executive committee for that purpose, and that Dr. Browning is instructed to appoint its members.

Dr. Thomas reported on the Resolution, In Re Contract Practice in Industrial Compensation Work as follows:
Gentlemen:

A full attendance of your committee and one member of the State Committee on Industrial Accident Insurance, met at my office Wednesday night, March 27th, and after listening to the reading of much of the data used for making our report last year to the State Society (of which committee I had the honor of being chairman), and to letters from Mr. Fellows, manager of the fund, and fully considering and discussing them, the members present admitted that it would not be within the bounds of good business for either the insurance companies, the State compensation fund, or the insured to live up to their agreement made with the State Society at Santa Barbara three years ago, as regards permitting any member of the Society to do industrial compensation work. To do this is equivalent to saying that we believe every member of this Society is thoroughly competent in this work, which is, of course, a wrong assumption. We believe that industrial work is largely surgery and should come under the care of men especially trained and having special facilities for that work.

They have presented to us definite proof of many very glaring incidents of inefficiency; some disloyalty in the matter of padding bills; and undisputable evidence of neglect and other shortcomings on the part of the profession in the diagnosis and care of industrial accident cases.

While we do not believe it is fair, nor believe it to be good business on the part of the State fund to limit the men who are acceptable to the fund to a few, there is no doubt but what a limitation must be put on this sort of work, in order that the law regulating industrial accident insurance, which is on our statute books, can be enforced. The instances of wrong diagnosis, prognosis and treatment given by Mr. Fellows of the commission to this committee, are many and most flagrant. Some of these cases reported are well known to some of the members of this committee.

Our committee is desirous of standing for the medical profession and at all times will resent unfair criticisms, and will endeavor by all possible methods to prevent a stigma from resting upon the profession, but its members must admit that the fund has ample reason for refusing to continue its business on the basis of permitting any M. D., regardless of his lack of special training to assume charge of all industrial accident cases which may come into his hands.

We feel, therefore, that it is incumbent upon us to recognize these facts and endeavor to supply the commission, when requested, with the names of the men who are first willing, and second able, both in knowledge and appliances, to render good services to their injured people.

Your committee's recommendation then is, that a responsible secret committee of five members of the County Society, who do not want the work, be appointed by the president of the Society to act as an advisory board to the commission, to place before the manager of the fund, from time to time, the names of the men in the county who desire the work, and who are doing good surgery and who, they believe, will be fair in their financial dealings with the fund. It should be arranged so

that when a man wants to do this work, he can apply to the fund for his appointment, and in return, if the manager does not know him, he can secure all necessary information regarding the applicant, from our secret committee.

We recommend and respectfully request that the manager of the fund cause an application blank to be printed so that those who may desire to do this work may make formal application.

We consider it desirable to both the commission and the medical profession at large, that the present panel of eligibles for the work, be rapidly increased in accordance with the above plan.

Your committee wishes to go on record most emphatically against any and all of the schemes which are being used by most of the insurance companies to secure their medical services for less than the accepted fee schedule, and to urge the Council to proceed, as per instructions from the Society, at once with the disciplining of all members who are guilty of participating in such schemes. The two most common of these transgressions are first the straight salary one, which is simply an effort to get the work done below schedule, and second accepting the work by men at the fee schedule or less and then submitting it to certain other men at a profit to themselves.

Respectfully submitted.

DR. C. P. THOMAS, Chairman;
DR. H. E. SOUTHWORTH,
DR. C. E. PHILLIPS,
DR. E. M. PALLETTE,
DR. F. L. ROGERS,
DR. A. HALDEN JONES,
DR. E. O. PALMER.

Dr. Hunter asked whether twelve men on such a committee would not be a political matter.

Dr. Thomas said that it was a compromise deal with Mr. Fellows that satisfactory men were to be appointed. Any member not satisfactory is dropped from the list. He does not care to increase the list.

Dr. Hunter spoke of a case he had which was referred to others. May not we in general practice be treated equally unfairly?

Dr. Thomas answered that it could not be prevented.

Dr. Cook told of the resolution passed by the committee of the State Society, accepted by that of the County Society, which would come up at the meeting at Del Monte and a fight would take place there regarding it.

Dr. Thomas, as chairman of the State Committee: I will be for this Society if we reject the measure and report it to the State Society.

A motion that the Committee on Contract Practice be continued was carried.

Dr. Thomas C. Myers: As a member of the Society for many years I was in doubt in the way the legal defense fund of the State Medical Society was handled. I became a defendant in a suit of a case where the patient died one and a half hours after the operation. I gave notice and was referred to Mr. Morrow who had no objection to have my personal attorney work on the case with him. Mr. Morrow knew more about embolism, etc., relating to the case than many of the profession and the case was thrown out of court. The State defense fund is right and just. The plaintiff was found unreliable and a perjurer. The State Society spared no expense in looking up the record without extra cost to me. I am heartily in favor of the legal defense fund and our attorney. I joined by donating \$30.—\$15 per year.

Long Beach Branch.

Dr. H. H. Heylman, secretary, reports: We had a very profitable meeting the evening of April 26th in which we were joined by the dentists of this city, as well as the doctors and dentists of San Pedro and Fort McArthur.

The scientific program consisted of a symposium on "Focal Infections."

"Viewpoint of the Dentist," Dr. Frank B. Damon.

"Viewpoint of the Rhinologist," Dr. Robert B. Sweet.

"Viewpoint of the Internist," Dr. Bernard Oettinger.

The papers were illustrated by numerous plates and lantern slides and the program was followed by a buffet luncheon.

Pasadena Branch.

Dr. Harry F. Markolf, secretary, reports: No meeting of this branch was held during March.

Dr. F. A. Speik, chairman; meeting held at office of Frank A. Giguette, D. D. S., the Dental Society uniting with the Medical in the program. Routine business first transacted.

First on the program was a paper on "Dental Interpretation of X-rays," presented by H. R. Packard, D. D. S.

Dr. Packard spoke of the necessity of radiographs but also stated the other examinations should not be neglected. He believes radiographs should be interpreted only by those skilled in such work. He mentioned facts of misinterpretations and their effects.

Charles Lee King, M. D., took up the medical aspects of "Dental Infections." Dr. King considers focal infections about the teeth as of the same significance as focal infections elsewhere. He quoted research work and other work done by others along the line of focal infection. He cautioned against considering the tooth infections as being the only causes of manifestations. Other foci not discovered may be giving rise to the symptoms, and a careful and complete search should be made.

W. C. Smith, D. D. S., took up the "Physical Defects of Children as Observed by the Orthodontists." He described the typical defects as produced by pressure or by lack of pressure. He presented many photographs illustrating the conditions which he described.

There was a lengthy general discussion of the subjects. After adjournment refreshments were served.

Commissioned Officers of Los Angeles County Medical Association.

Captain J. A. Balsley writes from Camp Kearny, April 26, saying:

The commissioned officers of the Los Angeles County Medical Association, now in active service at Camp Kearny are having a splendid opportunity to demonstrate their professional ability and at the same time acquire the necessary military training for efficient service under experienced regular Army officers.

Without exception our County Society members have entered upon their work here with both "pep" and judgment. Some of them have been given positions of considerable responsibility which means that the Los Angeles County Medical Association will likely be well represented on the firing line somewhere over there when this unit arrives.

Very sincerely,

J. A. BALSLEY.

Personals.

Major J. M. Burlew with the United States Medical Corps at San Antonio has been discharged from active service on account of physical defects. April 6th he left for Chicago to be operated upon. On his recovery he will return to Santa Ana.

Dr. Charles G. Shipman, a former Health Commissioner of Santa Monica, died suddenly, April 9, in his office in the First National Bank Building, Ocean Park.

Mother of Dr. Charles Burnside Passes Away.

Mrs. Mary Elizabeth Burnside, 73 years of age, mother of Dr. Burnside, of Los Angeles, died April 10, at her home 1802 North Van Ness avenue, Hollywood.

Long Beach Doctor in British Medical Corps.

Dr. Gordon Grundy, graduate of McGill University, Canada, who practiced medicine in Long Beach, is now a lieutenant in the Royal Army Medical Corps stationed at the 38th General Hospital in Saloniki. He entered the army August 2, 1917, in Canada, where he was doing hospital work.

Dr. Lindley Recovering from Operation.

Dr. Walter Lindley, the founder and general manager of the California Hospital, is recovering from the operation he underwent April 14. Dr. Lindley is 68 years of age and has lived in Southern California for forty-three years.

Dr. J. M. Goodspeed, 77, well-known physician of Los Angeles, died suddenly at his residence, 1121½ South Olive street.

Los Angeles Doctors Wanted for War Duty at Once.

Seventy-five Los Angeles physicians and surgeons under 35 years of age are called for immediate service in Europe by Captain M. M. Cloud of the United States Army Medical Corps. The names of the applicants will be sent immediately to the Surgeon General at Washington. The enlisted are to be sent into the War Zone Hospitals back of the British lines or the convalescent hospitals in England. Apply at room 228 San Fernando building. Applicants must bear pure Anglo-Saxon or good American names. Names that savor of German origin will not be forwarded as they would not be accepted in Great Britain. They must be graduates of reputable medical colleges and must be engaged in the active practice of medicine. California stands thirtieth on the list of States which have sent their medical men into the service.

Physicians under 31 years are subject to service as selects. They would enter the army as privates. It would be better that they enter service in their own profession. Those that enlist will serve in the United States Army Medical Corps, but do British service.

Major J. J. A. Van Kaathoven, April 11, issued a call to the Medical Corps for a volunteer internist for Base Hospital 35 at Camp Kearny.

Army Base Hospital Wants Fifty More Men.

Fifty men not over 45 years are wanted for immediate enlistment in the Army Base Hospital No. 35. Major J. J. A. Van Kaathoven, 1118 Brockman Building, Phones F 2025 and Main 4942, is director of the unit which is now at Camp Kearny. Applicant should apply in person, by mail or phone between 10 a. m. and 5 p. m.

This service will require of one almost all the duties usually required of hospital internes, except the medical side of the work. The men need not be medical men. There is a chance for promotion and immediate service in France.

Two Los Angeles Women Go to France.

Dr. Placida Gardner, city bacteriologist, and her sister, Miss Margaret Gardner, city prosecutor, members of the Stanford University war unit, will leave for France May 15th.

Homeopathic Society Elects Officers.

At a meeting at the Hotel Alexandria, April 10, the annual election was as follows:

Dr. F. H. Bishop, Alhambra, president; Dr. S. S. Salisbury, Los Angeles, vice-president; Dr. B. M. Fuller, Los Angeles, secretary-treasurer. Dr. W. J. Hawkes was toastmaster. Among the speakers were: Dr. Eleanor Martin, Dr. H. G. Shepherd, Dr. F. S. Barnard and Dr. Charles R. Clapp.

It was announced that with the initial endowment of \$6000 a new homeopathic hospital in the eastern part of Los Angeles would soon be opened.

White Hospital Opening.

Dedicatory exercises of the White Memorial Hospital were held April 21 at 3 p. m. on the hospital grounds at Boyle and Michigan avenues for the Loma Linda College of Medical Evangelists.

Dr. Percy T. Magan, superintendent of the White Hospital was chairman. Dr. William R. Molony of the State Board of Medical Examiners, the Rev. Arthur G. Daniells, president of the world conference of Seventh Day Adventists, the Rev. W. C. White, son of Mrs. Ellen G. White, for whom the hospital was named; Dr. Newton Evans, president of Loma Linda College of Medical Evangelists; the Rev. E. E. Andrews, vice-president of the world conference for North America, and the Rev. J. W. Christian spoke. The hospital is built upon the court plan, the buildings opening into a central court on the block instead of on the street.

Orthopedic Surgeons Banquet.

Lieutenants Charles S. Young, W. C. S. Koebig, A. M. Schultz, L. M. McCoy, Frank J. Bestin, James J. McLaughlin, and Captain John Cree Wilson of Los Angeles; Lieut. Charles A. Warner of Ontario; Captain Richard Dillihunt and Lieut. Victor P. Rocha of Portland; Captain Earl Greenwood, Lieutenants Joseph J. Kavanaugh and T. Z. Peoples of San Francisco; Lieutenant C. A. Downs, Baltimore, Md.; Lieutenant John E. Paulson, San Quentin; Captain Everett O. Jones, Seattle; Lieutenant J. W. Crawford, Sacramento, and Lieutenant R. M. Smith of Loma Linda of the Medical Reserve Corps, banqueted their former professors at the University Club April 17.

The honored guests were Drs. A. E. Gallant, Elliot Alden, W. R. Molony, C. L. Allen, Miles C. Varian and Stanley P. Black. The headquarters of the Medical Corps officers are at 810 Brockman Building.

LOS ANGELES COUNTY.

(Continued from May Journal, 1918.)

Dr. Harlan Shoemaker spoke on "Intestinal Obstruction."

He showed the value of histories of these interesting cases. The average mortality is 55 per cent. 45 per cent. walked into the hospital and remained three to eight days on the average, although some were three years coming. Catharsis had been used in all cases, causing reverse peristalsis and vomiting to get rid of same, rupture being the danger.

1. **Pain**, which diminishes with gangrene.
2. **Vomiting** present in every case, belching of gas due to reversal of peristaltic wave.
3. **Distention** may not be present, or may be excessive from drinking too much water.
4. **Tenderness** on palpation requires experienced judgment.
5. **Abdominal Rigidity** during pain.
6. **Tumor mass**, 86 per cent. did not present any. In 18 per cent. tumor could be felt.
7. **Peristalsis** may be present in 13 per cent. Auscultatory peristalsis, absent with gangrene.
8. **Constipation** is always present.

These symptoms and signs constitute the clinical picture of obstruction.

Leukocytosis is present in all cases.

Treatment is medical and surgical. Soap and enemata, washing of stomach for sanitary reasons, by emetics as mustard and water or apomorphine. Nothing should be given by mouth. Water by the Murphy drip method, by hypodermoclysis. Surgical treatment by early operation.

Discussion.

Dr. Chas. P. Thomas commended all Dr. Shoemaker said. He thought the issue in post-operative cases with obstruction are not always fatal; that such cases may be saved as late as the eighth or tenth day, if they had had stomach lavage. They stand re-opening well. He told of a woman re-opened eight times for enteroptosis

first and then for obstruction, who is now living and well. Distention is present when ice water was given and no stomach pump used. The use of the stethoscope is essential in obstruction, as it points out the obstruction early in the case, thus diagnosing in time for operation.

Dr. Geo. L. Cole spoke of a case of obstruction due to gall stones near the ileocecal valve. There was no history of gall stones, but one of gas and indigestion. The last few years laxatives were used regularly. The gall stones were found in removal of obstruction. A medical case.—Labor had lasted three or four days, and two days after confinement the patient was moribund with intestinal obstruction. Strychnine was given, distention began to lessen and eight days later the patient passed eight inches of intestine. She has been well since.

Dr. E. H. Wiley spoke of a case of obstruction with symptoms of nausea, vomiting, rigidity and unequal and unsymmetrical distention. The withdrawal of the urine relieved the obstruction. A woman was operated on for fibroid and obstruction which was found to be caused by a small tumor in the ileum containing a piece of bone with four or five teeth.

Dr. A. H. Zeiler told of leukocytosis, and nitrogen retention in the blood as of value in early diagnosis of intestinal obstruction. Indican occurs in any form of constipation.

Dr. E. H. Schneider dwelt on intestinal paresis in this connection, and Dr. C. F. Nelson on leukocytosis as one of the early signs; that a case should not go on to peritonitis. Obscure intestinal pain should be carefully studied by the fluoroscope and the X-ray. The cause of intestinal pain should be determined and relieved by early operation, before obstruction develops. Intestinal obstruction other than those cases due to strangulated hernia, etc., are cases of neglect on part of physician. The diagnosis should be made in all cases before intestinal obstruction develops.

Dr. A. B. Cecil spoke of a type of obstruction following right nephrectomy.

Dr. O. O. Witherbee thought much time would be wasted waiting for all the symptoms. It is better to make an incision and find no obstruction than making it too late. In one case the possibility of obstruction was studied by four practitioners and operated upon too late; a loop of intestine was dead. The use of the X-ray and an aseptic scalpel would have been better. When shall we open the abdomen? Shall we open when fully convinced or study the case with the chance of losing the patient who then really has no chance at all?

Dr. Schumaker in closing said that the nitrogen balance was not so interesting as pain, vomiting, distention, tenderness, rigidity, possible tumor mass, peristaltic wave and constipation to make a good diagnosis. The blood count is also of value. Leukocytosis is a rather early sign. Obstruction occurs most frequently past middle life and in early life. Paralysis of intestine is the stage when reverse peristalsis is about to take place. Treatment should consist in an absolute starvation diet and absolute rest. Water should be given under the skin or by colon, not taken in the stomach, which causes distention.

"Splints and Their Application. With Relation to Fractures. Demonstration of a Universal Adjustable Splint," by Dr. J. Rollin French.

Dr. French said that the legal journals discuss this subject because of malpractice suits. The fracture must be reduced, the position immobilized. The splint should give ease and comfort besides being efficient. The cost and time of construction must be taken into account. The splint is made of light wood and must immobilize the limb. The framework must be of rigid material. It should be modified at time of application and

sterilized after a few weeks. It should be removed from time to time varying with the fracture. At the end of the week, massage should be given. Aero-splint for shoulder at right angle, triangular splint, internal angular splint, bridges for compound fractures, plaster bandages on roll, splints for plastic work as for extensor tendons, Hodgens frame, double inclined frame, fracture box, all were spoken of and shown.

Dr. E. A. Newton spoke of fractures being treated in many different ways, of immobilization above and below fractures. A week after Colles fracture, massage should be given every day. The patient should be able to go to work soon, not to get ankylosis. Massage is important.

The Remote Effects of Absorption of Urine from the Colon. A Case of Traumatic Unilateral Uretero-Intestinal Anastomosis.

(By Dr. A. B. Cecil.)

The author points out that heretofore the chief interest in uretero-intestinal anastomosis has centered on developing a technic of implanting the ureter into the bowel in such a manner as to prevent ascending renal infection and hydronephrosis. He has carried out investigation of animal experiments, congenital cases of uretero-intestinal anastomosis and, clinical cases of uretero-intestinal anastomosis in man to determine what deleterious effects, if any, might arise from the absorption of urine from the intestine after implantation of the ureter into the bowel. He reports a unique case of unilateral uretero-intestinal anastomosis which had been present for twenty years and resulted from trauma in removing an ovarian cyst. The kidney still continued to functionate into the bowel. The case presented most marked toxic symptoms, blindness, severe headache, high blood pressure, tachycardia, great nervousness, etc. All of these symptoms being very greatly relieved by removal of the kidney which drained into the rectum. His conclusions are that urine can be diverted into the large bowel compatible with quite a long term of life but that independent of kidney destruction prolonged diversion of urine into even the lower bowel exerts a deleterious influence after a considerable number of years which may produce a clinical picture not unlike chronic nephritis.

Discussion by Dr. R. V. Day and Chas. E. Zerfing. Dr. C. P. Thomas spoke of extrophy of the bladder and of high death rate in colon operation because of colon bacilli.

Dr. Cecil mentioned that substances in the colon sometimes go back through the cecum.

Los Angeles County Medical Meeting of March 21st was preceded by community singing led by Mrs. M. Thorner, Mrs. Carl Johnson, Mrs. C. G. Stivers, Miss Ruth Hutchinson, Mrs. William Duffield and others. Wives, best men and girls and friends helped to render the stirring songs in a lively spirit appreciated by all present.

Dr. Wm. Duffield, the president, opened the meeting by declaring that the draft has only commenced and that personal sacrifice is necessary. He announced that the program consists of a symposium on "Selective Service."

Dr. Chas. C. Browning said that every man can be of service, although unable to go to war because of physical disability. Tuberculosis may not disqualify him at home but he cannot go to the front. If one having tuberculosis were discharged from the army because of such disability, he might on his return seeking work be unable to secure any. An incipient case may become a clinical one.

"The Classification in Selective Service," by Geo. J. Denis, chairman Los Angeles County Joint Local Board. He spoke on the theory and practice of selective draft between the ages of 21 and 31.

"Kaiserism," he said, is a blight worse than any disease. Selective Service law is the greatest law the human intellect has produced. It has created a great army in less than one year, all based on the Constitution. To protect the country, the Government was forced to declare war April 6, 1917. The Selective Service law was enacted by Congress May 18. 10,000,000 names were registered. The men were called before the various boards consisting of 15,000 members. The registrants must give reasons why they should not serve. It is no draft, no conscription; it is selective service. The members of the boards are appointed to select the men.

Exemptions:—First, all men except those within the ages of 21 and 31 who have no dependents, called Class I-A.

Second, men who have wives with independent means, Class 1, 2.

Third, those who have dependent father, mother, brothers and sisters.

Fourth, those who have dependent wives.

Fifth, men already in the service. The felon, for no convict can wear the uniform of the country.

The duty of the 15,000 members of the board is to furnish peaceful citizens as warriors. District 17 is the largest board. Exemptions must be in writing. The wife may ask for exemption no matter how much the husband may desire to go, for he owes support to wife and children. Should he leave his wife soon after, she could send him to war for having ceased to be the support of his dependent wife. That man instantly goes into class one. A man who is 5 or 6 pounds overweight or 10 to 12 pounds under weight should be allowed to enter the army. The theory is to get men. Questionnaires must be filled by men of serviceable age. Some pass the local boards with a glance. The local boards should be reasonably certain; more than 600 doctors have been discharged for inefficiency alone. Defects like hernia, troubles of feet and legs can be remedied by surgeons of the U. S. Class C is the industrial army.

"The Medical and Surgical Requirements of the Selective Service," by Granville McGowan, chairman District Medical Advisory Board.

Dr. McGowan said that the army could not be raised successfully without the medical profession. The board was asked to volunteer its services. With the exception of those who have had experience in great corporations, such as insurance companies, the doctors found that the qualifications were quite different, and many diverse opinions arose. Neither the men nor the Government were satisfied. As physicians have their limitations, they know no more in the army than when they were in practice. Slight defects should be repaired. The specialists named in the various systems must be honest and courteous and give a good examination. All classes of labor should be conscripted; the medical service first. Weight, height, girth, eyes, ears, teeth, nose, throat, heart, lungs, genitals, general impression as healthy etc., must be considered. The first class may be from 5 ft. 4 to 6 ft. 2 in height and weight in proportion. The man must be able to carry 62½ pounds on his shoulders for 24 hours. If there is a deficiency in weight find out the cause, examine lungs for tuberculosis. Diabetes, chronic Bright's disease or Basedow's disease may be the reason. The joints must be nimble, etc. The back must be straight. The board will be enlarged to meet demands.

"Some Observations on the Cardio-Renal Work at Cantonments," by Major Walter Brem at Camp Kearny. Dr. Brem pointed out how a man's life may depend on an examination. A case with mitral stenosis, fever 95° to 100°, tonsils enlarged and infected was thought to be tachycardia due to

auto-intoxication from infection. Dr. Brem saw men break down from heart lesions, nearly all had mitral stenosis or hyperthyroidism, or rheumatism. They break down from intensive training when they would not show any affection in civil life. They show no sign while at the disability board in the base hospital, and would say that six different boards never found any heart trouble. There were 156 cases of aortic insufficiency, 100 of hyperthyroidism. The middle west and Utah lead in the latter. Athletic heart, the syndrome of the English, is not admitted, but considered due to hyperthyroidism. The middle west and Utah lead in the latter. Athletic heart, the syndrome of the English is not admitted, but considered due to hyperthyroidism. Tachycardia, the usual symptom of hyperthyroidism, may be caused by mitral is usually practiced before entering service.

MENDOCINO COUNTY.

April Meeting of Medical Society.

A regular meeting was held on Saturday evening, April 20th, at the residence of Dr. L. K. Van Allen, Ukiah.

Our President, Dr. G. W. Stout, called the meeting to order. Members present: Drs. G. W. Stout, Ida Malpas, M. J. Rowe, L. K. Van Allen, F. C. Peirsol, H. O. Cleland, L. C. Gregory and O. H. Beckman. Visitors: Drs. Arabella Feldkamp, Talmage; M. A. Craig, Lakeport; W. L. Blodgett, Calistoga; Donald R. Smith, Talmage, and Captain Raymond C. Babcock, M. R. C., U. S. A.

Minutes of last meeting approved.

Dr. A. S. Hickox, Hopland, and Capt. Raymond C. Babcock, M. R. C., U. S. A., were elected to membership.

Among the communications were letters from our Senators and Representative in Congress in answer to our letters urging their active support for the bills for increase in the rank and percentage of physicians in the Medical Reserve Corps of the Army to equal that given to similar officers in the Navy.

A letter for information from the New York Academy of Medicine.

Dr. Van Allen read a circular letter—"To the Local Health Officer"—on Communicable Diseases, from Surgeon-General Rupert Blue.

Program: Dr. H. O. Cleland reported on the after-treatment of his Caesarian Section, which terminated satisfactorily. Next came his paper on Goiter. In it he discussed goiter from every direction and cause—with varying treatment by both medicine and surgery and with varying results. This excellent paper was discussed by all present.

Dr. Van Allen read a very instructive paper on Hydrotherapy in Pneumonia. He emphasized cold towels and mitten rubbing, fomentations and cold compresses.

Capt. Babcock gave a very interesting and illustrating discourse on "Experiences as an Army M. D."

Dr. Peirsol, the Alternate, made a verbal report on the State Society Meeting at Del Monte.

On adjourning Dr. and Mrs. Van Allen conducted us from the neat and fragrantly decorated parlor into a dining-room equally delighting. Our sense of taste was certainly satisfied and left a pleasantly grateful feeling towards Mrs. Van Allen and her cozy and cheerful home.

On Sunday forenoon, April 21st, at Talmage, Dr. R. L. Richards, Superintendent of the Mendocino State Hospital, gave a very practical, illustrating and instructive clinical lecture on Praecox. Several varieties of clinical subjects were interviewed, among them the Czar. Dr. Richards pointed out the peculiarities and progress of each kind, in both the male and female. This society is very much beholden to Dr. Richards for this clinical opportunity.

Our Volunteers.

Lieut. Raymond C. Babcock has been promoted to a Captaincy and is home on furlough.

News from Lieut. H. H. Wolfe states that he had received notice of a recommendation for a Captaincy and was expecting his commission from Washington in a few days. He is on duty in the Camp Infirmary at Camp Crane, Allentown, Pa., and has been busier than ever. Had about sixty cases of mumps, with a few of scarlatina. As he is kept busy improving his mind and his patients, little time is left for letter writing.

Assistant Surgeon R. H. Hunt, U. S. N. R. F., is on the "Moccasin."

NAPA COUNTY.

The officers elected by the Napa County Medical Society for the year 1918 are as follows: President, Dr. J. B. Rogers, State Hospital, Napa; Vice-President, Dr. Robert Crees, Napa; Secretary, Dr. O. T. Schulze, Napa. Dr. Robert Crees was also appointed Associate Editor.

SAN DIEGO COUNTY.

Dr. Gordon T. Courtenay has accepted a commission as Assistant Surgeon in the Navy and is stationed at Ballast Point, Cal.

Dr. O. G. Wicherski, county physician, is again actively about after a few days' acute illness.

Climate and tuberculosis with especial reference to the enlisted man, furnished a timely and animated discussion at the first meeting of the County Society in May. The paper of the evening was presented by Dr. Leon DeVille.

A very interesting dinner meeting was held by the County Society at the U. S. Grant Hotel recently at which the honor guests were the medical officers of the Navy who are stationed about San Diego. Interesting addresses were made by W. H. Bucher, Surg. U. S. N., W. M. Kerr, Surg. U. S. N., E. W. Phillips, Past Asst. Surg. U. S. N., and James F. Churchill, Asst. Surg. U. S. Naval Reserve Force.

The Talent Workers' Hospital, after seven weeks of preparation, is about ready to open its doors to the families of the officers and enlisted men in the service. The managerial board consists of the ranking officer of the Army, here stationed, the ranking officer of the Navy, here stationed, the president of the Talent Workers and the president of the County Medical Society.

SAN FRANCISCO COUNTY.

SUBSCRIBE TO THE BUILDING FUND FOR THE SAN FRANCISCO ASSOCIATION FOR THE BLIND

Send Your Checks to 432 Sutter Street
or 1526 California Street.

SAN JOAQUIN COUNTY.

The regular meeting of the San Joaquin County Medical Society was held on Friday evening, April 26th, in the offices of B. F. Walker in the Elks' Building. Those present were: Drs. Margaret Smythe, B. F. Walker, T. J. Cochrane, F. Conzelman, H. B. Bolinger, E. J. Todd, A. H. McClish, Dr. McCloskey, C. R. Harry, Dr. Mason, G. T. Davison, J. V. Craviotto, H. E. Sander-son, J. E. Dameron, Mary Taylor, E. A. Arthur, C. D. Holliger, D. R. Powell, with Major J. Wilson Shiels of the Letterman General Hospital, San Francisco, as guest of the evening. The president introduced Major Shiels, who made a most entertaining and instructive talk upon the experiences with the medical cases seen in the Letterman General Hospital.

SANTA BARBARA COUNTY.

First Lieut. Phillip Cunnane passed through town recently on his way to the Medical Officers' Training Camp at Fort Riley, Kans., where he is a part of Company 31. Much is expected of the brilliantly promising future of Dr. Cunnane by his friends in Santa Barbara.

The new Santa Barbara General Hospital, erected by the county at considerable expense, at Goleta, is now ready for occupancy and will be occupied this month. The hospital is a credit to its builders and the county. Much satisfaction is expressed over its building arrangements and location.

The Cottage Hospital is once more the recipient of great benefit from its benefactors. A nice new addition is being built on the west end which is to be devoted entirely to obstetrics. This will greatly enlarge the department and the physicians of the place greet its advent most joyfully.

SANTA CLARA COUNTY.

The Santa Clara County Medical Society held its regular monthly meeting on May 1st at The Oaks Sanitarium, Los Gatos.

The doctors were first taken on a tour of inspection of the institution's new and model buildings and were particularly interested in the demonstration of the service building and kitchen.

The scientific program began at 8:30 p. m. It consisted of a paper on the Modern Treatment of Tuberculosis and Sanitarium Methods, by Dr. W. C. Voorsanger, medical director of the sanitarium; cases treated at the Oaks Sanitarium during the past two years by Dr. Louis Boonshaft, assistant medical director of the sanitarium; and The Value of the X-Ray in Tuberculosis of the Lungs, by O. Ginsburg, roentgenologist. Many unusual and interesting X-ray plates of lung cavities, artificial pneumo-thorax, spontaneous pneumo-thorax and circumscribed lesions were shown.

At the end of the scientific program, the guests sat down to a supper as a practical demonstration of the sanitarium's cuisine.

The large attendance voted the meeting one of the most successful ever held by the society.

Military News**STANDARD MEDICAL NOMENCLATURE.**

In view of confusion arising because of different terms used in various medical groups to designate the same things it was deemed advisable that a conference be held to discuss the adoption of uniform nomenclature. Accordingly, an informal preliminary conference has been held at the offices of the medical section of the Council of National Defense and it is believed that a promising start toward reaching the desired end has been taken.

In a small percentage of instances the same diseases are designated by different words. Similarly, injuries of identical nature, identical operations, procedures such as surgical dressings, diagnostic tests and methods of treatment are, in different branches and in different localities, given different names. The same symbol should be used to designate the same condition. There is also lack of uniformity in abbreviations used in various medical records, such as hospital histories, written orders, and laboratory reports.

It is obvious to all medical men that, as a means of quick understanding and saving of time in these days when time is so precious, the same nomenclature and abbreviations for all identical things should be used. The men who attended the conference were agreed as to the desirability of such entire uniformity.

A net result of the meeting, inasmuch as the Army, Navy, and Public Health Service are prac-

tically in accord, was the passing of a motion that the Council of National Defense, medical section, should request the Surgeon General of the Army, the Surgeon General of the Navy, and the Surgeon General of the Public Health Service each to name a representative to confer on the matter of agreement concerning names of diseases and injuries. It was also voted that after such a list has been prepared there should be called together representatives of the leading national bodies who should have a voice in such decisions. Once a general agreement is reached the 20,000 doctors who go back to civil life after the war will automatically bring these lists into general use throughout the hospitals of the country.

INFORMATION BUREAU ON NATION'S HOSPITALS.

Information regarding the hospitals of the United States, in process of compilation since 1916, is now collated and indexed in the medical section of the Council of National Defense. A central bureau of information concerning the hospital facilities of the country, under war conditions, is thus provided. The data will be kept up to date from month to month. This bureau has not only the details of over 1000 active hospitals but is also gathering full data concerning nearly 8,000 other institutions which include sanatoria, infirmaries, homes, asylums, and dispensaries.

What each hospital has contributed in the way of medical men and internes for war service has been entered on the cards. The number of nurses who have volunteered and those remaining, the possibilities of expansion for war-service, the results of personal inspection by state boards will constitute valuable active working data.

United States Army medical training schools have been created with a capacity of 21,000 officers and men, 15,000 enlisted men, and 6,000 officers have been already trained and graduated.

Pomona Valley Hospital

By JOSEPH K. SWINDT, M. D., Pomona, California.

The Pomona Valley Hospital, located at Pomona, Los Angeles County, is owned by the Pomona Hospital Company, a corporation consisting of about two hundred stockholders. The hospital building is a Class A structure of reinforced concrete, absolutely fireproof construction throughout and bonded against earthquake shock. The building, grounds and equipment represent an investment of seventy-five thousand dollars.

At present there are forty beds equipped for patients. Four rooms are connected with private bath, and four semi-private rooms accommodate two or three patients each. At one end of the basement floor a group of rooms has been arranged for the forcible detention of insane, violent or criminal cases, and includes accommodations for attendants in charge. Spacious diet kitchens on the second and third floors are connected with the main kitchen by large dumb waiters. A home laundry is conducted in the basement.

The operating pavilion includes operating room, obstetric delivery room, sterilizing and scrub rooms. A special eye, ear, nose, and throat operating room has been recently provided for by the family of the late Dr. F. W. Thomas, formerly president of the company.

Patients enter the hospital by an ambulance drive which passes through the basement floor of the building. From this drive they are transported on an automatic elevator to all floors and the roof garden. All rooms are so built that beds containing patients may easily be pushed out to commodious screened porches at each end of all floors, or taken on the elevator to the sun parlor on the

roof, or out in the open air of the roof garden, which covers the entire building. All rooms are heated and ventilated by the plenum forced air system; on hot, dry days, moist, water-cooled air is forced throughout the building by the same system. The silent light annunciator call system connects all rooms and porches with the nurses' chartrooms, with control pilots in the office and



Pomona Valley Hospital.

superintendent's room. Speaking tubes connect all floors with the business office.

The building is surrounded by some two acres of ground, which has been beautified into a fine park, many of the trees bearing fruits for the patients' use.

There are over one thousand rose bushes, besides



Pomona Valley Hospital—Nurses' Home.

flowers and shrubs of all varieties in the gardens. An inclined plane permits patients to reach the grounds easily in wheeled chairs.

The Training School for Nurses enrolls from fifteen to twenty nurses. The new home for these nurses, erected through the generosity of Miss Martha N. Hathaway of Claremont, was opened for occupancy April 25th. The cost was five thousand dollars, and it provides commodious quarters for twenty nurses. It contains, in addition to a large living room, a recreation room, in which has been placed a good sized library, donated by the Pomona Medical Society. The meetings of the Medical Society are held in this room each month, and the nurses are regular attendants at all scientific programs.

The hospital was erected in the Spring of 1914 and opened for service August 26, 1914. During the year 1917 there were admitted 810 patients. There were 550 operations performed and 85 babies were born there during the year.

The Hospital maintains no regular staff, but is

open to the patients of any licensed practitioner of California. The officers of the corporation are: Dr. E. E. Kelly, President; Chas. P. Curran, Vice-President; Dr. J. K. Swindt, Secretary; F. E. Graham, Treasurer; N. G. Moulder, Business Manager; and Miss Edith Patten, R. N., Superintendent.

There is no endowment of this Hospital and no desire on the part of the stockholders to reap dividends on the business. Rates are adjusted to meet expenses necessary to provide the best of service and the greatest amount of comfort for the patients. The average cost per day per patient for 1917 was four dollars. The charitable work of the institution is carried on under the direction of the Women's Auxiliary, whose funds, raised by their own efforts, are utilized to pay the expenses of needy cases at semi-private rates, so that no discrimination is ever made in the care and treatment of any patrons of the hospital, a unique and most gratifying solution of a vexatious problem. Auxiliary cases are treated without fee by any physician they may elect through an agreement made with the local Medical Society.

Department of Pharmacy and Chemistry

Edited by FELIX LENGFELD, Ph. D.

In its propaganda for reform, the Council of Pharmacy and Chemistry of the A. M. A. considers some old favorites.

BROMIDIA is classed as distinctly dangerous on account of its chloral contents and because the impression has been given that the chloral has, in some way, lost its bad qualities.

TONGALINE is a hodge-podge of drugs thrown together without therapeutic rhyme or reason, and NEUROSINE is almost as bad.

The makers of PEACOCK'S BROMIDES claim superiority for their preparation because the bromides are free from chlorides. Even if this be true, there is no great advantage as the commercial bromides contain not much over 1% of chlorides, so that even if 100 grains were given in a day the patient would get about as much chloride as in a tablespoonful of milk.

TYREE'S POWDER once claimed to be a mixture of alum, boric acid, phenol and aromatics. Later analysis showed it to be a mixture of zinc sulphate, boric acid and aromatics and this is the formula now given on its label. PULVIS ASEPTINOL COMP. makes about the same claims as TYREE'S POWDER with an addition of a small amount of Hydrastis. Preparations of this kind really fill no place in medicine. Any physician can write a better prescription and save his patient money. In addition the makers of many of these preparations ask the physician to see that they are dispensed in original containers. This gives the patient a chance to see just what he is getting and to prescribe for his friends.

ASPIRIN is a good example of the way in which physicians popularized a proprietary article. Aspirin was first exploited at a time when a vigorous popular campaign was being waged against Acetanilide, Phenacetine, etc. The physician was kept supplied with reports from foreign clinics showing that Aspirin had many good qualities and no bad ones. Aspirin was freely prescribed and, in addition, many physicians told their patients to take Aspirin tablets or capsules. Of course, every patient thus advised began to prescribe Aspirin for his friends and soon Aspirin became the popular family remedy used by everyone from baby to grandma, for everything from baldness to ingrowing toe nails. It is but justice to the patentees to state that they were not to blame for this. They confined their propaganda to the physician and the medical journal. The fault lay with the medical profession. It was soon found,

however, that notwithstanding foreign clinical reports, acetyl salicylic acid is not entirely unlike acetanilide, but like it, has a kick, so while very useful in proper cases, its indiscriminate use is dangerous. Many physicians, therefore, tried to discourage its general use but their efforts were misunderstood and too late. Nothing short of drastic legislation will curb the evil. It is only within the last two or three years that there has been any direct advertising of Aspirin to the general public. The patent expired last year and the patentees have tried to make the monopoly perpetual by seeking to convince the public that Bayer Aspirin is better than other Acetyl Salicylic Acid. Tests recently made in the laboratories of the American Medical Association show that practically all standard makes of Acetyl Salicylic Acid are equal, if not superior, to the Bayer Aspirin and that there is no reason why this should be used in preference to any other.

ARSPHENAMINE is an excellent example of the prejudice that exists against American made articles. There is no reason why this cannot be made in this country and there is no reason to suppose that the American made Salvarsan, Arseno-Benzole, etc., is in any way inferior to the German Salvarsan. However, reports continue to come in of the toxic effects of the American made article. This is perhaps due to the fact that toxicity when the German Salvarsan is used, was ascribed to idiosyncrasy or faulty technique and when an American article is used it is ascribed to toxicity of the article itself. There is no doubt that toxicity was observed frequently when the German Salvarsan was used and there is no reason to suppose that it is more frequent with the American article than it was with the German. Certainly any physician is thoroughly justified in using any one of the Salvarsans that has been approved by the Council of Pharmacy and Chemistry.

The Council rejected for admission to the list of new and unofficial remedies MEDIOL SUPPOSITORIES and GUAIODINE, neither of which seems to have reached California as yet.

MEDIOL SUPPOSITORIES were rejected because they seem to be an imitation of Anusol Suppositories and as Anusol Suppositories have not been admitted to the list there seemed no reason for admitting an imitation.

GUAIODINE claims to contain colloidal iodine. It is found to be merely an iodated oil and there seems no reason to attribute to it the antiseptic properties claimed.

All licenses issued under the Harrison Anti-Narcotic Act expire June 30th and should be renewed before July 1st. Blanks will be sent to all licensees and these must be filled out and sworn to either before a Notary or at the Custom House. The fee and blank should then be sent to the Collector of Internal Revenue. Last year one month's grace was allowed so as to impose no hardship upon physicians, etc., away on vacations. There is no assurance that this will be done this year as it is entirely optional with the Commissioner. Medical officers of the Army or Navy require a license if they use or prescribe narcotics in private practice.

State Board of Health

MAY MEETING.

The State Board of Health met in Sacramento on May 4, 1918, the following members being present: Dr. George E. Ebricht, president; Dr. F. F. Gundrum, vice-president; Dr. Edward F. Glaser, Dr. Adelaide Brown, and Dr. W. H. Kellogg, secretary.

Acting upon the statement of the Health Officer at San Francisco, Dr. W. H. Hassler, that \$5000 has been appropriated for the maintenance of an

additional ward in the San Francisco Hospital, such ward to be devoted to the care of the tuberculous, and because of the resolution of the San Francisco Board of Supervisors providing for the appointment of a committee to select a site for an out-of-town sanatorium, to be erected at a cost of \$50,000, the tuberculosis subsidy, which was withdrawn from the San Francisco Tuberculosis Hospital March 2nd, was temporarily restored until July 1st. At that time the Board will again consider the continuance of this subsidy, such action to be based upon further activities of the San Francisco authorities toward the provision of a sufficient number of beds devoted to the care of the tuberculous and the establishment of an out-of-town sanatorium.

The secretary was delegated as a representative of the State Board of Health to attend the Sixteenth Annual Conference of State and Territorial Health Officials to be held in Washington, D. C., on June 3rd and 4th.

Upon the recommendation of the Director of the Bureau of Sanitary Engineering, permit was granted to the town of Livermore to continue to dispose of its sewage upon certain lands in the vicinity of the town. A temporary permit was also granted to the city of Lodi to continue to use the existing sewer system and septic tank, discharging effluent into the irrigation ditch of the Woodbridge Canal Company under certain definite conditions. A permit was granted to San Diego County to continue to discharge sewage from the County Tuberculosis Hospital by treatment in Imhoff tank with final disposal by irrigation on a portion of the county farm adjoining.

Upon the recommendation of the Director of the Bureau of Sanitary Engineering, permit was granted to the city of Tracy to continue to furnish water for domestic purposes from its present supply under specific conditions. Upon the recommendation of the Director of the Bureau of Sanitary Engineering, temporary permits were granted to continue the use of sewer wells for a period of six months in Manteca. These permits were granted upon certain definite conditions as specified by the Director of the Bureau of Sanitary Engineering. Temporary permits to operate swimming pools were granted to George A. Cheney, Coronado Tent City; Edward Weit, Wasco, Cal.; J. D. Kenney, Los Angeles; Leota I. Zapp, Fresno; C. W. Gibson, Middletown; J. H. McDougall Company, Salinas, and the city of Tulare.

A permit to operate a cold storage warehouse was granted to the Peoples Ice Corporation of Fresno, upon the recommendation of the Director of the Bureau of Foods and Drugs.

Certificates as registered nurses were granted to three candidates upon the recommendation of the Director of the Bureau of Registration of Nurses. These certificates were granted under the reciprocity provisions of the act.

The report of the Food and Drug Inspection Committee was approved, following which a number of alleged violations of the Food and Drug Act were brought before the Board for hearing.

W. H. KELLOGG, M. D., Secretary.

BUREAU OF VENEREAL DISEASES.

The following letter is being sent to the Commanding Surgeons of Army and Navy stations in the State:

The Bureau of Venereal Diseases of the State Board of Health was organized for the express purpose of combating venereal diseases in both the soldiers and sailors and the civil population. Its work is done in direct co-operation with the War and Navy departments and the Surgeon General's office. For this reason it desires to call your attention to what it is doing and what it is offering.

It issues a pamphlet on "Gonorrhoea and Syphilis" for patients.

It issues a pamphlet on "Syphilis" for physicians. It issues a pamphlet "Instructions for Mothers on Teaching Girls the Laws of Sex."

It furnishes special placards to be posted in latrines.

It issues a pamphlet on "Rules and Regulations for Venereal Disease Control."

Copies are enclosed and will be furnished in any quantity desired for any camp.

In co-operation with the Commission on Training Camp Activities it offers and pays expenses of illustrated lectures on Social Hygiene and Venereal Diseases. Through the same agency it offers an exhibit for every camp.

It offers the use of a stereomograph showing automatically slides on sex hygiene and venereal disease. This machine is now at Camp Kearny and may later be used at other large camps.

It offers the services of the State Board of Health Laboratory for examination of blood for syphilis and slides for gonococcus. Containers will be mailed on request.

It offers to place any physician's name on the mailing list for the Monthly Bulletin containing reports of the Bureau of Venereal Diseases and items of general interest in public health work.

It offers special investigation of any reported source of infection of gonorrhoea or syphilis.

In general, the bureau will undertake to assist in the solution of any problem connected with the campaign against venereal disease, in which any official of the Army or Navy desires assistance or co-operation.

National Children's Year Program

Adapted to California's Needs.

A program of nation-wide application for Children's Year has been issued by the Children's Bureau, Department of Labor, Washington. The application of this program to California has been made by the Children's Year Committee of the Woman's Committee of the State Council of Defense. Many points in the National Program are covered in California by legislative measures and by active agencies in the field, and a co-operative spirit is established with these agencies, i. e., Child Labor and Juvenile Protective, Juvenile Court, Mental Hygiene, Recreation and the Mother's Pension Work.

The California State Program will be as follows:

- (1) A year's campaign on better birth registration.
- (2) The more intelligent use of our clean milk law.
- (3) The establishment of Children's Health Centers—
 - (a) In Medical Clinics, centers at schools or churches, in as many communities as possible. Three times during the year in June, November and March, these centers will be used for a drive on measuring all California Children under six. A physical standard is to be developed by the Children's Bureau, and the "Weighing and Measuring Drive" is National and not State work. Throughout the year these Children's Health Centers will be open for conferences.
 - (b) Individual doctors are to be enrolled to give Free Health Conferences in their own offices as a weekly service

to children throughout the year. This plan will reach parts of the State where no organized clinics exist.

- (4) The ideal for each county to work for will be a permanent Community Public Health Nurse and a Children's Health Center, as the result of Children's Year work.
- (5) The necessity of better pre-natal guidance will be brought to the mothers of the State by the distribution from the Children's Year Headquarters, 323 Haight Street, San Francisco, to all women enrolling, a series of nine pre-natal letters which have been used in Kansas and Massachusetts.
- (6) Throughout the year we hope to gather data which will help in an understanding of the relation between the family budget and good health in our State.

The lesson of the result of physical examination for the draft, and the elimination of thirty-five per cent. of our men from twenty-one to thirty-one years of age, must come home to every mother. Many of these physical defects began in young childhood, and by better care could have been prevented.

The National Program for Children's Year has the slogan: "Save 100,000 Babies." The pre-school age is emphasized as the age to be helped. For California this means a saving of 1,822 lives and the extension of the ideals of the value and welfare of child life throughout the State.

Each county, under its Chairman of the Woman's Committee of the Council of Defense, has appointed a Children's Year Committee (absorbing into this Committee—Public Health and Child Welfare Committees previously appointed), and the county program will cover 1, 2, 3 and 4 of this program.

Numbers 5 and 6 will be arranged for by the central office in co-operation with the county committees and State agencies.

Remember that no program can be made valuable unless each integral part works hard, enthusiastically and steadily.

The co-operation of every mother in California is needed to save and keep well our babies.

Doctors, nurses and committees can help, but the mother is the chief worker.

ADELAIDE BROWN, M. D.,
Chairman.
MRS. ALFRED McLAUGHLIN.
LOUISE B. DEAL, M. D.
MRS. EDW. F. GLASER,
Treasurer.

The White House
Washington, D. C.

March 29, 1918.

Honorable William B. Wilson,
Secretary U. S. Department of Labor,
Washington, D. C.

My Dear Mr. Secretary:

Next to the duty of doing everything possible for the soldiers at the front, there could be, it seems to me, no more patriotic duty than that of protecting the children, who constitute one-third of our population.

The success of the efforts made in England in behalf of the children is evidenced by the fact that the infant death rate in England for the second year of the war was the lowest in her history. Attention is now being given to education and labor conditions for children by the legislatures of both France and England, showing that the conviction among the Allies is that the protection of childhood is essential to winning the war.

I am very glad that the same processes are being set afoot in this country, and I heartily approve the plan of the Children's Bureau and the

Woman's Committee of the Council of National Defense for making the second year of the war one of united activity on behalf of children, and in that sense a children's year.

I trust that the year will not only see the goal reached of saving one hundred thousand lives of infants and young children, but the work may so successfully develop as to set up certain irreducible minimum standards for the health, education and work of the American child.

Cordially and sincerely yours,

(Signed) WOODROW WILSON.

New Members

Hickok, Arthur S., Hopland.
Finkelberg, I. E., San Bernardino.
Bolton, Elmer S., San Bernardino.
Kruse, Fred H., San Francisco.
Robinson, Samuel P., Santa Barbara.

Obituary

MARTIN KROTOSZYNER,

San Francisco.

Deep sorrow settled over this community, and especially over the medical profession when on the twentieth day of April, 1918, the news of the terrible tragedy, the brutal murder of Dr. Martin Krotoszyner, spread like wildfire throughout the city.

His long career here had endeared him to his colleagues and gained him an unusually wide circle of friends and patients who, with his family, mourn deeply his sudden and untimely loss.

Dr. Martin Krotoszyner was born in Ostrowo, Germany, on September 6th, 1861. After having finished the preparatory schools of his native town he commenced his studies at the University of Berlin. Medicine then was not his choice. He always declared philology to have been his first love, and to this science his first three semesters were devoted. The death of his father changed the financial aspect of his family and with it the pursuit of his studies. He took up medicine and after the prescribed course graduated in the Universities of Berlin and Leipzig. After his graduation he spent a considerable time as a young physician in hospitals, and acted as substitute in the practice of older established physicians.

The spirit of adventure moved him in March 1908 to turn his eyes toward America, and he accepted a position as surgeon on a steamer of the Hamburg-American Line plying between Hamburg and New York. A medical friend in New York spoke to him of the wonderful charms of the Wild West and the free and romantic life prevailing there, and induced him to accept the offered place of a physician in a small Arizona town. In this wild and remote village he commenced his life's work in America with the consciousness and energy that distinguished everything he undertook. But his stay there was not for very long. Romance alone, especially of the Arizona brand, does not possess a very nourishing quality. After six months of hard work and receiving his remun-

eration mostly in the form of merchandise and animals of dubious value, he decided to try other fields. Here again chance guided his choice. As youth will, even in a man afterward so deliberate and thoughtful, he relied upon the flip of a coin to determine whether he should go to El Paso, Texas, or settle in California. California it was.

Coming from Arizona the southern part of the state did not appeal to him especially, and San Francisco became his choice. While the earliest years of his practice here were full of hard struggles, he soon gained friends among the profession and in the public. His earnest endeavor and conscientious work soon became appreciated and success followed and remained with him ever since.

After years passed in general practice he devoted himself more and more to the specialty of the genito-urinary organs and attained a nation-wide reputation in its practice. His ambition for the improvement in knowledge and experience caused him to make seven trips to the East and Europe to the centers of learning.

Dr. Krotoszyner was at the instant of his untimely end Urologist of the German Hospital, which position he had held for fourteen years. He was also the Chief of the Urological Clinic of the San Francisco Polyclinic, a member of the staff of the San Francisco Hospital, Vice-Chairman of the Genito-Urinary Section of the American Medical Association and American Director of the Jahrbuch für Urologie founded by Prof. Nitze. At former periods of his life he occupied the position of Chairman of the San Francisco branch of the American Urologic Association, Chairman of the Genito-Urinary Section of the San Francisco County Medical Society, member of the Board of Directors of the San Francisco County Medical Society and Instructor of Cystoscopy, Medical College, University of California.

Dr. Martin Krotoszyner married in June 1896, and had the good fortune to possess in his wife a true mate and companion, who by her presence and tender care cheered his life and aided him in his work and efforts. She and their five children are stunned by the deep hurt of the terribly cruel blow, and we in the name of that noble profession of which he was an ornament, extend to them our sincere and heartfelt sympathy.

J. R.

Deaths

Dr. Charles G. Shipman, of Ocean Park, Cal., Rush Med. Coll., Ill., '81, died suddenly in his office, April 9, 1918. He was a member of the Los Angeles County Medical Society.

Dr. J. E. Frazier, of Tuolumne, Cal., Louisville Med. Coll., Ky., '85, died April 7, 1918.

Dr. Charles H. Wheeler, of Fall River Mills, Cal., Eclectic Med. Inst., Ohio, '89, died April 11, 1918.

Dr. Wm. A. Long, a graduate of Cooper Medical College, San Francisco, died in Lewiston, Montana, April, 1918.

Dr. Wm. Lomax Graves, a graduate of Med. Coll. of Georgia, 1859, died in Los Angeles, Cal., April 7, 1918.

Dr. James T. Miller, of Sacramento, died March 29, 1918, age 67, of heart disease.

Dr. Bruno A. Genss, of 596 Haight St., San Francisco, died April 10, 1918, of myocarditis.

Dr. Wm. B. McGill, of Redlands, died at Lancaster, March 19, 1918, of blood-poisoning. He was a graduate of the Univ. Penn. Med. Dept., Pa.